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ABSTRACT

This annotated bibliography contains 115 citations ranging in date from 1957 to 1971. References are divided into five sections: 1) teacher certification and selection; 2) teacher education; 3) modeling, feedback and audiovisual media techniques; 4) observation, measurement, and evaluation; and 5) research on teacher characteristics. When available, ERIC, author, AERA, or other abstracts have been included with the citation. (RT)

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PERFORMANCE BASED CERTIFICATION: A BIBLIOGRAPHY

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Preface

This bibliography was originally prepared for the participants in a conference on Performance Based Certification which was sponsored by The City University Triple T project in April 1971. It was then expanded in the hopes that it would prove to be a valuable timesaver for those currently wrestling with the problems and issues arising from a changing certification base.

The effort to compile a bibliography such as this was a major one in which many staff members of the Research and Evaluation Unit participated. I wish to thank all those not specifically acknowledged.

Patricia M. Kay, Coordinator

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INTRODUCTION

Performance based teacher education programs and certification systems are a rather recent and still developing enterprise and, as such, present a host of unresolved issues and concerns. Preparing teachers for specific performance competencies and certifying them on the basis of collected evidence that they do, in fact, possess these competencies is a notion that while eminently sensible is exceedingly complex. An immediate question arises as to which of the vast array of competencies that might be trained for shall be. This is a question of deciding which competencies make desirable changes in pupils. A related but perhaps more fundamental question is whether the criteria for successful demonstration of performance shall reside in the teacher trainee's behavior itself or in the results of that behavior vis-a-vis changes in pupil performance. These are real concerns which must be subject to philosophical as well as empirical treatment.

The answers to such questions lie only partially in past research on teaching. Although there have been hundreds of studies pertaining to teacher effectiveness, only a handful of them are directly applicable to the issue.

In addition, as the idea of the performance base has developed, new and old issues have been raised concerning the state of the art of evaluation instrumentation, accountability for educational outcomes, differential staffing and merit ratings, community control of schools and professional input into and responsibility for teacher training.

Although there are still many unresolved, and, doubtless, some undreamed of, problems with respect to the implementation of the

performance base notion, it is a notion that is gaining popularity rapidly. In one respect at least, the interest in the thrust has been unusual. It is not often that an educational innovation captures the interest of the research community as this one has done. There could be a number of reasons for this. The current emphasis on accountability is doubtless one. Then, too, the implementation of the idea demands both the utilization of the skills of educational technologists and that measurement and research specialists and education faculties in general address themselves to the question of performance evaluation. There is a suspicion, however, that the real carrot that is dangling ahead is the promise that with proper monitoring and implementation, performance based teacher education and certification offer the real possibility of acquiring knowledge about teaching--particularly knowledge about what teaching competencies make a difference in children.

Scope and Structure of Bibliography

This bibliography might better be titled, "Selected References (with annotations and/or abstracts) on Performance Based Certification and Some Related Issues." In none of the sections would one find complete lists of references on the given topic. Rather, for each topic, references were selected that were judged to have more or less direct bearing on the philosophical, empirical, political or practical issues associated with the performance base thrust.

Section I deals with teacher certification and selection. Included in it are references to performance based certification per se as well as certification in general.

Section II concerns teacher education programs or sub-programs and research on them which relates to aspects of the performance base.

Section III is closely related to II concerning techniques for developing competencies particularly with respect to audio-visual media.

Sections IV and V deal with methodological issues (observation, measurement, evaluation) and research on teacher "behaviors" and "competencies," respectively.

It is important to note that listings in this bilbiography are accompanied by a variety of kinds of annotations and abstracts. Where the term ERIC Abstract appears in the reference, the abstract itself was used. This was also the case for Dissertation Abstracts, although some of them have been abridged. For some other listings, particularly research studies, there was an attempt to include enough information in the annotation for the reader to make a valid judgment as to whether or not to pursue the lead.

Section I. Teacher Certification and Selection

Allen, W.C., Cody, L.V., & Drummond, W.H. Performance criteria for education personnel development: a state approach to standards. The Journal of Teacher Education, 1969, 20, 2, 133-135.

In 1968 the Washington State Board of Education established a pilot program of teacher education based on the following principles: 1. preparation should continue throughout the career of educational personnel; 2. preparation should be individualized; 3. preparation should be based upon performance; 4. professional associations and school organizations, as well as colleges and universities, should have responsible preparation roles. (These organizations work together to develop criteria for state approval of teacher education programs.) The aim is to establish "a set of standards that are individual and contextual, based upon the idea that human difference is to be valued and that change is inevitable." (p. 135)

Andrews, T.E. New directions in certification. Paper submitted to: Improving State Leadership in Education Office. Denver, Colorado, September 1, 1970.

This is a case study on the modification of Washington State certification standards to encourage improvement of programs of teacher preparation in various specific ways. It includes, as Appendix I, the much-discussed "fourth draft" of the Statement of Standards for Preparation of School Personnel Leading to Certification, dated April, 1968. The case study reviews some of the issues and controversies surrounding the development of the standards. Chapter 2 of the study presents the concept of a process standard, which is fundamental to the Washington Statement, and which links preparation and certification in a unified sequence. Chapter 4 is about behaviorally stated objectives and the effort to introduce them into the language of certification standards, against which there was rather determined opposition. Chapter 5 is about kinds and levels of certification and about objections against the idea of levels on the part of representatives of professional associations. Chapter 6 is about individualization of instruction in teacher preparation. Chapter 7 deals with the sharing of authority and responsibility for programs of preparation and for certification requirements among the State Department of Education, colleges and universities, local district "school organizations" (a term not defined in the standards but clarified somewhat in an interpretation), and the local and state levels of the teacher professional associations. The Statement of Standards specifies the kinds and levels of certification in general terms leaving many details to be negotiated on a local or regional level; it also outlines the steps to be followed in planning teacher preparation programs, which incorporate the performance-based concept of preparation, and provides an outline of structures for coordination of preparation among the agencies involved, and specifies the standard that will be applied by the State Board of Education in approving programs of professional preparation.

Andrews, T.E. New directions in certification. Improving state leadership in education. Olympia, Washington: Washington State Board of Education, 1970. (ERIC Abstract, ED 043 796)

This study proposes an almost entirely new and innovative program of teacher certification. It is program-centered and performance-centered and points to the opportunity for many people to participate in an effective way for the development and improvement of the teaching profession. Certification as a teacher should be related to one's ability to teach, that is, his or her competence. New certification regulations in the state of Washington are based on four fundamental standards: (1) Professional preparation should continue throughout the career of the practitioner; (2) School organizations, professional associations as well as colleges and universities should be recognized as preparation agencies; (3) Discussions about preparation should be based upon performance--performance in relation to stated objectives in the world of the practitioner; (4) Preparation and career development programs should be individualized. The fundamental concept underlying attempts to develop new processes for certification is that roles in the educational world must change. If new directions in certification become law in the state of Washington, it is believed that the nature of teaching will change, school organization will change, and American education will change.

Annual progress report on teacher education. Billingham, Washington: Western Washington State College, September 1970.

Reviews the previous and planned research in teacher education at Western Washington State College. It includes a pilot study of a Clinical Program of Teacher Education based on a Competency Based, Field Centered Systems Approach (ComField) model (one of the nine models for elementary education funded by the U.S. Office of Education in 1968-69).

The major components of the Clinical Program which was pilot tested in 1969-70 are: 1) An Entry Program - a three credit course of classroom observations and seminars to help students decide if they want or are able to become teachers; 2) Laboratory in Teaching - a full-time two quarter (16 credit) course in which students complete individualized teaching-learning packages as the means for demonstrating competency in critical teaching behaviors; 3) Practicum in Teaching - a full-time two quarter (16 credit) student teaching experience with performance criteria based on the laboratory objectives.

An appendix lists the performance objectives for both the laboratory and practicum courses.

Bhaerman, R.D. Which way for teacher certification? QuEST Paper Series, #2. Washington, D.C.: American Federation of Teachers, 1969. (ERIC Abstract, ED 032 269)

The American Federation of Teachers (AFT) has no comprehensive policy and philosophy for the certification of teachers. Six issues have most

relevance to a more inclusive position: The union should review its resolution regarding certification based on "general education" in light of changes in the professional and academic specialization components of most preservice programs. On the question of temporary or emergency certification, the AFT should remain flexible but encourage its locals to establish standards or floors since the issue is so closely related to local needs. On the question of certification renewal, it must resolve problems regarding such projected innovations as evaluation of competency, levels of certification, and differentiated staffing. It must face issues related to "certification by examination" and to "program-approval certification," a better approach than the traditional course credit counting though it also poses problems. Finally, the AFT must study its role as the teachers union, not only regarding the issue of who shall determine certification standards but of what the real purposes of certification are. Apparently, qualified teachers should be licensed for a 3-year probationary period (to prevent incompetent persons from becoming teachers), but that certification requirements should not be manipulated to adjust the supply and demand of teachers or to enforce continued updating of professional knowledge and skills.

Burkhart, R.C. (Ed.) The assessment revolution: new viewpoints for teacher evaluation. Albany, New York: New York State Education Department, Division of Teacher Education and Certification and Buffalo State University College, Teacher Learning Center, 1969. (ERIC Abstract, ED 036 485)

This book presents the proceedings (speeches, discussions, and results) of the New York State Symposium on Evaluation in Education. The underlying purpose of the meeting was to respond to the State's proposal that the present approach to teacher certification and education be abandoned as ineffective and inappropriate to engage in a deliberate and detailed discussion of workable alternatives, and to develop a design for action. The underlying direction of the symposium was toward evaluation and certification of teachers according to specified performance criteria and the evaluation of teacher education programs according to the teaching ability of their graduates. The content of the symposium, which evolved in response to four basic tenets of the performance evaluation viewpoint and the issues raised by each, treats four main questions: 1) What is wrong with the existing system of certification and teacher education? 2) Why propose performance evaluation? 3) How would performance evaluation work? and 4) If adopted, what steps can be taken to implement this as a total program? Among materials included in the publication are a model for performance evaluation certification, a comparative analysis of classroom observation techniques, and an extensive bibliography on "Evaluation in Education."

Daly, P.L. Certification by performance. Changing Education, 1970, 4, 4, 23-24.

A personal evaluation of the "Training Session on Performance-Based Teacher Certification for Leaders in Teacher Education" held May

19-22, 1970 in Miami Beach under the sponsorship of the Florida State Department of Education and the U.S. Office of Education.

The program prospectus described the following changes which the conference sought to work toward: 1. Broadening the concept of teacher education so that inservice education gains equal prominence with pre-service education and so cleavage between the two is eliminated. 2. Involving agencies other than colleges or universities as equal participants in the teacher-education process. 3. Using teacher performance (i.e., actual demonstration of the requisite skills and knowledge as the basis for evaluating programs and candidates, as the basis for awarding teaching certificates, and as the basis for designing individual and pre-service teacher-education programs).

The author criticized the promotional atmosphere of the conference which encouraged testimonials of performance-based certification and asked what the delegates planned to do to further the cause. He further argued against the use of industrial terms such as "inputs," "outputs," and "product orientation" which dehumanize the educational process.

Daly (an AFT national vice-president) encourages the union to participate in such conferences but not to blindly endorse the ideas of the conference planners. He cautions against the misuse of evaluative devices intended to aid the trainee and in fact used to evaluate for retention, promotion, and salary increases. He also states his fear that the selected performance criteria may eliminate creative individuals who do not conform to the predetermined standards.

Daniel, F.K. Performance-based teacher certification: what is it and why do we need it? State of Florida, Department of Education, August 3, 1970.

Defines performance-based teacher certification as requiring "evidence of the candidate's ability to perform as a teacher," which is considered "a central function in the bureaucratic process of teacher certification." Goes on to suggest that the basis for certification be viewed as a continuum with performance data at one end and data obtainable without any recourse to actual teaching situations at the other. Argues that performance-based teacher certification is needed (1) because it makes sense, (2) because the public will demand it, and (3) because it will strengthen the profession of teaching. The paper then describes the Florida approach to it, which is one of encouraging and assisting those institutions and local school districts which are willing to move toward the performance end of the continuum. The legal base for such developments was strengthened by an act of the Florida legislature providing modified guidelines for in-service teacher education.

Drummond, W.H. The meaning and application of performance criteria in staff development. Phi Delta Kappan, 1970, 52, 32-35.

Drummond discusses the problems involved in the use of systems technology (performance criteria) in teacher education and staff development without jeopardizing the individual's freedom. He provides: 1) a statement of beliefs and values concerning the application of technology

to education; 2) a set of principles for program development; 3) institutional considerations in the use of performance criteria; 4) individual considerations in the application of performance criteria for staff development; and 5) a summary of the changes in teacher education which logically follow from the ideas presented. (P. 32).

Each teacher education institution must describe the competencies (demonstrated by performance criteria) which educational staff must possess to play their professional roles. It must also describe how it will help individuals to achieve these competencies. The individual should be free to choose among institutions and, thus, their competencies. He should also be free to choose how he will achieve and demonstrate these competencies using the resources (counseling, training, feedback, etc.) of the institution.

Fagan, E.R. Conant on teacher education, a critical analysis. The Clearing House, 1965, 39, 461-466. (ERIC Abstract, ED 013 783)

The design and procedures for an announced test of five characteristics of the Conant plan for teacher education are questioned. The five procedures, to be implemented in five (experimental) colleges, are --(1) placing most of the responsibility for teacher certification on the colleges and universities, (2) making actual performance in the classroom the major factor in certification, (3) shifting a greater part of the on-the-job training burden to local school systems, (4) making the state authorities mainly responsible for supervision of the practice teaching and on-the-job training, (5) replacing methods courses by learning through teaching, with the help of expert supervising teachers. In four other (control) colleges, students are to be rated by trained observer-judges. Questions are raised about the reliability of identification of expert supervising teachers and of good teachers in general. More generally, the absence of acceptable criteria of quality in teaching is seen as a bar to a meaningful test of the Conant plan as designed.

Gilbert, H.B. & Others. Teacher selection policies and procedures in large public school systems in the United States. (Cooperative Research Project No. S-334) New York, N.Y.: New York City Board of Education, 1966. (ERIC Abstract, ED 010 005)

A national survey questionnaire pertaining to policies and procedures of teacher selection was sent to over 380 large school systems across the nation. Only those systems having an enrollment of at least 12,000 students were included. Comparisons were made with respect to school system size, teacher selection rate, teacher turnover rate, and student-teacher ratio by analyzing and interpreting responses of 85 percent of the school systems. Limitations and implications of the study were discussed, and several suggestions for further research were offered. A major finding was that selection methods in most school systems focus almost exclusively on the overt, peripheral aspects of their teacher candidates, and not on covert, dynamic personality characteristics. It

appeared, therefore, that most selection procedures are determined by what is easily obtained rather than on what might be important to assess, including the mental health of prospective teachers.

Howell, J.J. Performance evaluation in relation to teacher education and teacher certification. Division of Teacher Education, The City University of New York, April 1971.

This paper provides a general analysis of problems inherent in evaluation of teaching performance and of certain related issues. It does not, however, explore the question of evaluation instruments, as such, this being left for discussion in another paper.

Any particular teaching performance is limited by time, place, and other circumstances and must therefore be regarded as only a small sample of the large collection of activities called teaching. Confusion must be avoided between evaluation as part of the process of teaching and external evaluation--conducted by a third party--which has the process of teaching as its object. The framework for third party evaluation of a given teaching performance must include purposes--what the teacher is trying to accomplish--which are best expressed as "behavioral objectives," although applicability of the behavioral approach in some areas is problematic. Analysis of teaching requires theory and a theory, to be defensible, requires evidence of the validity of its component elements or constructs. Although the nature of the data to be used in evaluating teaching performance is mainly determined by the theory chosen, other data problems must be considered. Adequate sampling of teaching and control over the conditions of data collection are problems that may be particularly difficult.

Among the many related issues are: racial bias in the employment of teachers, merit rating of teachers, accountability for educational effectiveness, differentiated staffing of schools, and community control. Each is discussed briefly in relation to evaluation of teaching performance.

Kurland, N.D. Proficiency examinations in teacher certification: a new approach. Changes in Teacher Education: An Appraisal. Washington, D.C.: National Education Association, National Commission on Teacher Education and Professional Standards, 1964. Pp. 89-102.

A review of recent thought on certification by demonstration of competence as opposed to completion of prescribed courses and the use of proficiency examinations to assess competence.

The advantages of proficiency examinations are discussed. They include encouraging more people with ability to apply for teaching licenses, increasing flexibility of course requirements, improving the quality of teachers, encouraging independent study, and developing examinations which may eventually be used as qualifying examinations for all teachers.

The planning and development of proficiency examinations by the New York State Education Department up to 1963 is described. Tests were to be given and scored by the state but course credit given only by the teacher education institutions. Practice teaching would continue to be required in a course or equivalent teaching experience.

The issues which remained unsettled at the time of writing are the difficulty of the examinations, the relationship between examinations and existing courses and between examinations and standards, and the use of examinations in certification.

Lierheimer, A.P. Changing the palace guard. Phi Delta Kappan, 1970, 52, 1, 20-25.

Lierheimer discusses the purposes of teacher certification, some of the problems of the current certification practices, and proposes that new state certification agencies be established which would return control to local school districts.

The purpose of certification is not merely to insure that certain requirements are met. It is an evaluation of training as well and should emphasize the candidate's performance in achieving the educational objectives of the school.

One of the problems with teacher certification is that it ignores the research that has been done on teaching effectiveness. Certification by program completion does not consider whether a candidate can remember or apply his coursework. It also does not seek to include qualified but untrained persons. Certification does not keep up with the changes in society and the school. It ignores pupil desires, changes in curriculum and teacher performance and personality.

Lierheimer discusses the changes in society and in the teacher's role which must be considered in teacher certification. He says that teachers and administrators, teacher educators, professional associations, college administrators, pupils, parents and legislators should all be represented in a state certification authority which would help local districts set their own standards. The authority would evaluate the certification processes on the basis of pupil and teacher performance of specified objectives, task analysis and systematic behavioral observations. Licenses would be issued to professionals by the state professional association and employment credentials to those who meet the requirements of specialized tasks by the local school district.

Popham, W.J. Performance tests of teaching proficiency: rationale, development and validation. American Educational Research Journal, 1971, 8, 105-118. (Author Abstract)

The rationale and development of measures based on a heretofore untried approach to the assessment of teacher effectiveness are described in this paper. Performance tests of teaching skill were developed in the fields of social science, auto mechanics, and electronics in which an individual's instructional prowess is reflected by his ability to bring about prespecified behavior changes in learners. In each case the performance of experienced certified teachers was contrasted with the performance of individuals who were not trained to be teachers or who

possessed any prior teaching experience. In none of the three contrasts did teachers significantly out-perform nonteachers. The impact of these findings upon the validity of the performance test strategy is examined as are some alternative validation approaches.

Popham, W.J. The performance test: a new approach to the assessment of teaching proficiency. The Journal of Teacher Education, 1968, 19, 216-222.

Discussed the advantages and disadvantages to various methods and criteria to measure teacher effectiveness. The authors chose to measure pupil gain when teachers are given specified instructional objectives because it is the results of teaching which are most important and the same results may be achieved by teachers using varying methods.

The authors are developing a series of performance tests of instructor competence which consist of instructional objectives stated in terms of student behavior, learning activities which the teacher may or may not choose to use, and pre- and posttests administered by the researchers and not seen by the teachers. They attempted to validate the tests by testing the hypothesis that experienced teachers will achieve greater gains in pupil performance than non-teachers.

The results were given of the validation of a performance test on the topic of carburetion in the auto mechanics field. Three San Diego auto mechanics teachers and three Naval auto mechanics taught a ten-hour unit on carburetion to the specifications of the performance test.

The two groups of students achieved comparable pretest scores but the posttest scores were higher for the three experienced teachers' classes (significant at the .05 level).

Popham, W.J. & Baker, E.L. Validation results: a performance test of teaching proficiency. (AERA Paper Abstracts, 1968, p. 273.)

The paper will describe results of a project undertaken to develop and, hopefully, validate a heretofore untried method of assessing teacher competence, namely, through the use of a performance test. Papers describing the rationale and interim results from the investigation have been presented at the 1966 and 1967 AERA annual meetings. This paper will describe the conclusion of the project, a final report of which is now available (USOE Project No. 5-0566-2-12-1, Final Report, August, 1967).

The performance test was designed to function in the following way. Teachers were presented with a list of specific, operationally defined objectives for a particular topic and directed to teach the objectives. Following the instructional period, students were tested on the behaviors stated in the objectives. Teacher competence was judged on relationship to the way their students performed on the criterion test. An attempt to validate this method of measuring teacher effectiveness involved contrasting the results produced by experienced teachers and nonteachers on a performance test dealing with research methods in the social sciences.

Two separate contrasts were conducted, the first involving six professionally trained, experienced student teachers versus six housewives for a six hour teaching period. The second involved 13 regularly credentialed teachers and 13 college students for a four hour teaching period. In neither contrast did the teachers perform significantly better than the nonteachers.

The results will be interpreted as indicating that the experienced teachers were not more experienced than the nonteachers in promoting learner achievement of previously established instructional objectives. An alternative approach to validating the performance test strategy is discussed along with possible procedural modifications in the approach.

Schalock, H.D. The focus of performance-based certification: knowledge, teaching behavior, or the products that derive from a teacher's behavior. Paper prepared for the "Performance-Based Certification" conference. The Florida State Department of Education, Miami Beach, Florida, May 19-22, 1970.

This paper quickly discarding knowledge, course completions, or personal attributes as the basis for teacher certification, sets up an issue between "teaching behaviors" and "products" as the principal focus for a performance-based certification program. The arguments for each are examined: teaching behavior is more accessible and has strong logical (and empirical) connections with product, but the latter is the more ultimate criterion. Whichever choice is made, many hard questions need to be tackled, and the paper lists them for each approach. They include the problems of precise definition of behaviors and/or products, process of criterion formulation, specification of settings, determination of sampling procedure, decision as to allowable variation, functional relationship between processes, and implications of the whole approach for programs of teacher preparation. The author acknowledges a penchant toward the "product" orientation.

Special section: certification at the crossroads. The Journal of the New York State Teachers Association, 1970, 57, 17-24.

Views of four educators on which road the certification process should take.

In "Certification Requirements: The Search for 'Better Folk,'" Theodore Andrews discussed the changes made in N.Y. State certification requirements in October, 1968. They allow for more individualization of training programs and more freedom for administrators in the hiring and assignment of teachers. They are based on the following premises: 1. A teacher's certificate should be related to one's competence as a teacher and 2. The decision for determining that competence should be a. based to some extent on an objective analysis of one's teaching ability and b. made cooperatively by persons closely related to the teacher (p. 19).

James Young wrote "Confusion is - Certification by Performance." He calls for a finer definition of performance assessment and suggests the three-dimensional competency constellation model by Charles Fall which includes doing, being and knowing competencies. Assessment measures will have to be developed when the scope of behavioral assessment is defined and teacher education programs will have to be changed.

Arnold Cantor said, "Autonomy Is - The Cure for Certification Woes." He believes that performance should be the criteria for continued employment but training should be the criteria for certification. He believes that teachers should be given more autonomy, rather than the local superintendents who have more responsibility for certification under the new certification requirements.

In "Teacher Preparation: The Road to Professional Autonomy" George Williams suggested: 1. Universities and schools enter into joint contracts for teacher training. 2. On-the-job training be the joint responsibility of school and college with professors and teachers working together. 3. Only the most capable classroom teachers be chosen as cooperating teachers. 4. Students spend more time as observers and assistants in schools and spend one year as a full-time student teacher. The cooperating teachers and professors in a school would then recommend prospective teachers for certification.

State education departments' policies and practices in the approved program approach to teacher certification. Albany, New York: New York State Education Department, Albany Division of Teacher Education and Certification. (ERIC Abstract, ED 029 852)

As part of an interstate certification project, this bulletin summarizes information gathered by questionnaire from the 50 states and the District of Columbia on teacher certification policies and practices. Resumes of state education department responses cover legal and policy structure, approval of teacher education programs for certification (related specifically to the approved program approach in which any graduate of a state-approved institution is granted a certificate provided he has that institute's recommendation as a teacher), criteria for program approval, certification procedures, and statistical data. A sample questionnaire is provided.

Stinnett, T.M. & Pershing, G.E. A manual on certification requirements for school personnel in the United States (1970 Ed.). Washington, D.C.: National Association of State Directors of Teacher Education and Certification, National Commission on Teacher Education and Professional Standards, 1970. (ERIC Abstract, ED 040 962)

This latest edition (last in 1967) contains four chapters, the first a general discussion of "Innovations in Teacher Education, Certification, and Accreditation" dealing with the whole area of professional governance. Chapter 2 is a descriptive summary of "Preparation-Certification Standards and Procedures." Subtopics: Elementary Teachers, Secondary Teachers, Administrators; Fifth Year of Preparation; Increased Levels of Preparation; Significant Changes Since 1967; Personnel Required

To Hold Certificates; Types of Certificates Issues; Separate-Name Certificates; Special Certification Programs; Special Teacher Education Programs; The Certification Authority; Misassignment of Teachers; Revocation of Certificates; Approved-Program Approach; Procedures for Out-of-State Applicants; Use of Examinations in Certification; Alternate Routes to Certification; Reciprocity in Certification; Teacher Education Accrediting Procedures; Control of State Colleges; Advisory Councils; Professional Practices Acts; Certification Review Committees; Chief Problems of the States; The Shape of Things to Come; Teaching in Canada. Chapter 3, the major section, is a listing of "Certification Requirements for Teachers, Supervisors, Administrators, and Special School Service Personnel" arranged by states and territories. Chapter 4 lists "Teacher Education Institutions and Approved Programs" by states. A list describing state advisory councils on teacher education (or comparable agencies) is appended.

Teacher Education Annual Conference, 1969. Olympia, Washington: Superintendent of Public Instruction, 1970.

A report of Washington State-wide meeting concerned with teacher education; contains summaries of general session and discussion group papers. "Fourth Draft Program Development" (concerning the efforts toward performance based certification) contains papers on development of standards, obstacles to development and implementation, professional association involvement, changes in college and university programs, and concerns of school agencies; there is also one paper on health and social problems in education with reference to the developing standards. The second section of the report contains summaries of group discussions in curriculum areas, administration, counseling, etc.

Section II. Teacher Education

Baker, E.L. Relationship between learner achievement and instructional principles stressed during teacher preparation. Journal of Educational Research, 1969, 63, 3, 99-102.

Thirty-eight Peace Corps trainers were given instruction in the use of theoretically-based learning principles. Observers recorded teachers' use of these principles. Trainees were subsequently given a behavioral objective to achieve and high school students were pre- and posttested on items measuring the objectives. Positive relationships were found between student achievement and trainees' observed use of learning principles.

The research was based on the assumption that most taught teacher behaviors are rarely if ever demonstrated to be related to the task of bringing about learning.

Corrigan, D. (Ed.) The study of teaching. Washington, D.C.: Association for Student Teaching, 1967. (ERIC Abstract, ED 028 980)

This publication represents four years of work by the Commission on Implications of Recent Research on Teaching. An article by Henry Hermanowicz, "Studies of Teaching and Their Impact on Future Developments in Teacher Education," (ED 024 624) reviews recent critical examinations of teacher education, new developments in the systematic study of teaching, and the resultant emergence of theories of teaching. One by Martin Haberman, "Relating the Study of Teaching to Other Dimensions of Teacher Education: A Proposal," discusses four critical characteristics of a teacher education program which determine its influence on students, then presents an overview of proposed content for a professional sequence. Four presentations report action programs in different institutions which have recently changed their programs to include a new emphasis on the analytical study of teaching: (1) "Conceptual Models for the Study of Teaching in the Syracuse Inter-University Program," Thomas Clayton, (2) "The Use of Interaction Analysis at Temple University," Edmund Amidon, (3) "The Study of Teaching Behavior by Prospective Teachers," Morton Waimon, and (4) "Supervisory Conferences and the Analysis of Teaching," Dorothy McGeoch and Margaret Lindsey. "The Uses of Research on Teaching: Implications and Recommendations" by Donald Sharpe focuses on problems of dissemination and application of research; a 158-item bibliography on the Study of Teaching is included.

Fuller, F.F. Developmental and remedial adjuncts to "fixed" main track instruction. (AERA Paper and Symposia Abstracts, 1971, p. 76)

Prospective teachers differ not only in abilities but in personal qualities. A predictable sequence of concerns about teaching makes possible "personalized" treatments which can be developmentally applied. Procedures have been found to increase teachers' satisfaction with their preparation, their receptivity to feedback from pupils, awareness of

their impact on pupils, interesting teaching behavior, appropriateness of later decisions to teach, and other gains. Procedures discussed will include comprehensive psychological assessment, computer feedback, individual counseling based on assessment, early brief teaching, micro-teaching, counseling based on video tapes of their own teaching, feedback from pupils, sequencing of course content according to concerns, group counseling, special teaching placement and others.

Hoover, K.H. & Others. A comparison of expressed teaching strengths before and after student teaching. Journal of Teacher Education, 1965, 16, 324-328.

Student teachers (n=187) were asked to rank 25 teaching skills by how competent they felt in each before student teaching and again afterwards. There were significant (at the .01 level of confidence) differences between the two mean rankings of nine skills.

Students felt more competent in teacher led class discussion (top-ranked both before and after), establishing goals or objectives in terms of student behavior, construction and administration of classroom tests, rating scales, checklists, etc., managing classroom behavior problems, and directing classroom study activities.

Students felt less competent in utilizing instructional resources (field trips, guest speakers, etc.), preparation and execution of panel discussion, organization and direction of role-played activities (skits, dramatics, etc.), and supervising club or extra class activities. The lowest average ranked skill both before and after student teaching was interpreting standardized tests.

Johnson, W.D. The effectiveness of three microteaching environments in preparing undergraduates for student teaching. (AERA Paper and Symposia Abstracts, 1971, p. 64)

Three microteaching formats were compared. They were: peer teaching, microteaching with university freshman, and microteaching with high school pupils. Thirty special methods students were assigned to one of the three formats for six experiences. Each experience included periods of instruction and practice. Assessments were made at the end of microteaching and student teaching.

Significant differences at the completion of microteaching favored peer teaching, but microteaching with high school pupils was associated with superior performance at the end of student teaching. It appears easier to obtain desired training effects through peer teaching, but these effects do not seem to transfer to student teaching.

Koran, M.L. Varying instructional methods to fit teacher trainee characteristics. (AERA Paper and Symposia Abstracts, 1971, p. 76)

One problem facing teacher education programs is that of training large numbers of individuals possessing dissimilar patterns of abilities. A common strategy is to seek "a best method" of instruction. However,

recent research suggests that prospective teachers may learn more easily from one method than another, that this best method differs from S to S and that such differences are related to traineee aptitudes. Research will be presented in which teacher trainee aptitudes have interacted with learning from written and filmed instruction for both written and classroom performance criteria. The implications of such findings for teacher education will be discussed.

Lindsey, M., Heidelbach, R. & McClure, M. Annotated bibliography 1969 on the professional education of teachers. Washington, D.C.: The Association for Student Teaching, 1969.

Continues the annual review of the literature, with two major sections: I. Literature on professional education, and II. Non-print materials for the professional sequence. Notes that the emphases from the 1966-67 bibliography are supported, and gives additional emphases such as: specific proposals for cooperative arrangements between schools, universities, and communities in the preparation of teachers; and development and testing of new conceptual models for professional education of teachers.

McAvoy, R. & Carter, A. A performance curriculum in undergraduate teacher education. (AERA Paper Abstracts, 1970, p. 16)

This paper is a review of a new instructional design to undergraduate teacher education. Basically, the approach consists of a performance curriculum with competencies being identified and specified. The mode of presenting material is through an instructional laboratory where various kinds of media are utilized. Students are presented a flexible schedule for viewing material and may take criterion tests when prepared. While progressing through mediated units of instruction, student response sheets are used along with laboratory check-out tests. Students also meet once each week in a small discussion group to facilitate generalization and transfer.

A second aspect of the program consists of an automated audio-visual center for skill development and use of controlled teaching laboratories. These laboratories, incorporating techniques of microteaching and simulation, provide a situation in which all concepts are carried to the performance level.

Merrill, M.D. Differentiated goals for teacher trainees. (AERA Paper and Symposia Abstracts, 1971, p. 76)

One pattern of educational adaptation to individual differences consists of selecting different educational goals for different individuals. This pattern assumes an educational system has provision for optional educational objectives, but within each option the instructional program is relatively fixed. Such provision may open important approaches to teacher education, allowing the classification of teachers for alternative training programs aimed at the selection of teachers for different roles in school staffs.

Results from a recently initiated experimental Individualized Secondary Teacher Education Program (ISTEP) consisting of two different training sequences; 1) social and instructional interaction skills, and 2) instructional design skills, will be discussed within this context.

Ross, M. Structured practice in preparing school personnel, a guide to selected documents in the ERIC collection, 1966-1968. Washington, D.C.: ERIC Clearinghouse on Teacher Education, 1969.

This document covers two major topics: Programs and Personnel, and Methodology. Included in the first are student teaching, internships, supervision and roles of the supervisor and cooperating teacher, and programs for beginning and in-service teachers. Methodology includes instruments for analysis of classroom behavior, interaction analysis, T.V., microteaching, modeling, simulation, role-playing, sensitivity, etc. Brief summaries of the types of research in each area are given, as well as the complete ERIC abstract for references in each area (research as well as description of techniques and programs).

Waimon, M.D. & Hermanowicz, H.J. A conceptual system for prospective teachers to study teaching behavior. Normal, Illinois: Illinois State University, March 12, 1965.

This report describes a fairly simple category system based on Neal Miller's drive-cue-response-reward paradigm of learning, applying it to analysis of teaching behavior. The category system consists of three main categories, nine (9) sub-categories (activating, maintaining, informing, cuing, reacting informing, reacting cuing, rating positive, rating negative, and rating neutral) and a total of 34 elements or sub-subcategories. The system is limited to description of verbal behavior and requires the observer to judge the teacher's intent. The report also presents the results of a small experiment to determine the reliability with which college undergraduate students could apply the category system and to explore its relationship with certain other variables. Twenty-eight students were trained in the system and attained percentage of agreement coefficients with instructors' classifications averaging .882 toward the end of the semester, and ranging from .32 to 1.00. By another procedure coefficients of agreement between student team classifications ranging from .49 to .72 with a mean of .62 were obtained. From pre- and posttesting it was determined that the students had gained significantly on a semantic differential measure of learning of the concepts inherent in the system and on attitude toward teaching as measured by the MTAI, but not on any of the other variables assessed, viz., critical thinking, knowledge of curriculum research methodology, and attitude toward curriculum research.

Wilson, D.A. (Ed.) An annotated bibliography of published works from R & D Center for Teacher Education. Report Series No. 22. Austin, Texas: The Research & Development Center for Teacher Education, 1969.

An index lists articles from each of the main areas of research and development within the center: administration, personalization of teacher

education, assessment, teaching laboratory, curriculum-based instructional approaches to teacher education, and team teaching. The index is followed by abstracts listed in alphabetical order by author's last name.

Woodring, P. New directions in teacher education. New York, N. Y.: The Fund for the Advancement of Education, 1957.

The new directions in teacher education discussed in this book are those that were being supported or encouraged by the Ford Foundation's Fund for the Advancement of Education between 1951 and 1957. Very little of what is reported has anything to do with performance-based teacher preparation or performance-based certification as conceived today. The main thrust of the Fund's effort was to get programs going, mainly at the fifth year level, that would bring together persons from the "educationist" and liberal arts traditions to reassess the needs of teacher preparation and generate new curricular more likely to attract capable students and prepare them better for teaching careers. Analysis of the teaching-learning process itself is notable by its absence and specific aspects of teaching performance are nowhere defined.

Section III. Modeling, Feedback and Audio-Visual Media Techniques

Allen, D.W. Micro-teaching: a description. Palo Alto, Calif.: Stanford University, 1967. (ERIC Abstract, ED 019 224)

Described is the use of micro-teaching in the Stanford Teacher Education Program. Section 1 briefly introduces and provides a schedule for the 1967 Micro-Teaching Clinic. Sections 2 and 3 provide descriptions of the 1965 and 1966 Summer Micro-Teaching Clinics respectively. Included are discussions of (1) background information on micro-teaching, (2) preliminary planning, facilities, and personnel utilization, (3) the structure and format of the clinics, and (4) the evaluative data obtained during each year. Section 4 discusses (1) micro-teaching as a new approach for inservice teacher education, (2) the technical skills of teaching, and (3) developing specific teaching skills through micro-teaching. Tables of data for the 1965 and 1966 clinics are appended.

Allen, D.W. & Ryan, K. Microteaching. Reading, Mass.: Addison-Wesley Publishing Company, 1969. (ERIC Abstract, ED 030 647)

This book on a rather widely known but less widely applied technique for teacher education is intended both to inform those people who are unfamiliar with microteaching and to caution those who see it as a final answer to teacher training. The first chapter provides a working definition of microteaching; surveys its importance in supervision, research, and other areas; and evaluates its potentials and problems. The second chapter presents the component-skills approach to a mastery of teaching skills and demonstrates the value of the model-oriented technique. The elements of microteaching (e.g., video tape recordings, patterns of training) and the structuring of a microteaching program are discussed in the third chapter. Chapters four and five take up the specific advantages and drawbacks of microteaching for pre-service and in-service teacher training programs. The importance of microteaching for specialized situations--teaching in the inner city, training elementary teachers, teaching in liberal arts colleges, training Peace Corps and Teacher Corps volunteers, and micro-counseling--is evaluated in chapter six. The conclusion presents ways in which microteaching can be of value in educational research. (A short bibliography and an article on evaluation techniques for master teachers are appended.)

Allen, D.W., & Others. A comparison of different modeling procedures in the acquisition of a teaching skill. (ERIC Abstract, 1967, ED 011 261)

To determine the relative effectiveness of three modeling procedures for modifying teacher behavior (higher-order questioning behavior), videotapes were made of a series of four microteaching sessions representing in a 2 x 2 x 2 factorial design (n=103) that furnished eight experimental groups, (1) symbolic versus perceptual modeling--some groups read written scripts, whereas others saw the enactment of the scripts, (2) pure versus mixed lessons--positive instances only versus positive and

negative instances of the behavior to be learned, and (3) matching in the specific case versus matching in principle--some groups performed the same lesson as the model, whereas others used any lesson that matched the model in principle. Transfer was tested by requiring teacher trainees to incorporate questioning skill in a different lesson context. As measured by percent of higher-order questions out of total questions asked in a 5-minute teaching session, all groups showed significant gains over sessions. Specific findings were--(1) the perceptual and symbolic modes did not differ, (2) positive instances only appeared to lead to greater transfer, and (3) exact matching produced the greater number of higher-order questions but did not transfer to a new lesson.

Allen, D.W., & Others. Effects of feedback and practice conditions on the acquisition of a teaching strategy. (ERIC Abstract, 1966, ED 103 794)

To compare several methods of developing classroom questioning (probing) techniques via distributed practice and immediate feedback, when the latter employed videotaped performances of the learner, 85 interns were videotaped on 4 occasions during the first 20 minutes of regular classroom lessons. In between tapings they received 30 minutes of supervision, in which they viewed playbacks of earlier teaching along with a critique from an experimenter who provided discrimination training. Within-session feedback was held constant, and amount of practice and delayed feedback was manipulated, over 4 experimental groups. A posttest was videotaped about 7 weeks after training. Interns were trained in probing techniques (clarification, critical awareness, redirection, prompting, refocus) which depended on pupil response, as well as an encouraging divergent thinking, role played in brief, and pupil summary. Treatment differences, though not entirely consistent, favored massed practice--immediate feedback over distributed practice-reinstated feedback in initial acquisition of probing behaviors. The former also produced significantly more frequent probing than distributed practice and immediate feedback. Retention inferences can be drawn from the fact that distributed practice delayed feedback groups maintained higher probing response rates on the posttest than did massed practice-immediate feedback.

Bondi, J., & Ober, R. The effects of interaction analysis feedback on the verbal behavior of student teachers. (AERA Paper Abstracts, 1969, pp. 241-242)

The purpose of the study was to investigate the effects of interaction analysis feedback on the verbal behavior of student teachers. Forty randomly selected elementary education students were trained in interaction analysis. In the quarter following the training, the forty students were observed weekly while they were engaged in student teaching. Data were collected from systematic observations conducted by four trained observers using a thirteen category modification of the Flanders System of interaction analysis.

Twenty of the subjects (feedback group) received weekly matrices and information sheets, while twenty (nonfeedback group) did not receive such feedback. After eight weeks of observations, data collected were analyzed by means of a Lindquist Type I Analysis of Variance. F-tests for group means difference were computed for twenty-four selected dependent variables.

The independent variables of the study were (a) the feedback provided the experimental group and (b) the lack of feedback in the control group. The dependent variables were selected observed verbal behaviors of student teachers.

Results of the study show that student teachers receiving interaction analysis feedback differed significantly from student teachers not receiving feedback in their use of the following teacher verbal behaviors: (1) they used more praise; (2) they accepted and clarified student ideas more; (3) they used more indirect teacher talk as opposed to direct teacher talk; (4) they used more extended praise; (5) they had more extended use of student ideas; (6) they used more positive affective talk; (7) they accepted student ideas more after teacher-initiated student talk; (8) they used more positive reinforcement after teacher-initiated student talk; (9) they used less corrective feedback; (10) they criticized students less; (11) they asked more questions; (12) they used less lecture; (13) they gave fewer directions. There was also less teacher-initiated talk and more student-initiated student talk in the feedback group.

Borg, W.R. The minicourse instructional model. (AERA Paper Abstracts, 1970, p. 57)

The minicourse instructional model was developed from the Stanford microteaching research and draws heavily upon research evidence related to modeling, feedback, and audio-visual media techniques.

The elements in the model are as follows: First, the trainee sees an instructional film which describes specific behaviors and shows classroom examples of each. This is followed by a filmed lesson in which a model teacher displays the behaviors. The trainee then plans a microteaching lesson designed to practice these skills, teaches the lesson and videotape records his performance. He then replays the recording and evaluates his performance, revises the lesson and reteaches it to another group of pupils.

The minicourse instructional model has several important advantages for improving teacher performance: (1) it focuses on specific skills, (2) it provides a clear model of the skills being learned, (3) it provides practice in a simplified classroom situation, and (4) it provides immediate feedback to the trainee by way of videotape replays.

Borg, W.R. & Others. The effects of videotape feedback and microteaching in a teacher training model. Berkeley, Calif.: Far West Laboratory for Educational Research and Development, 1968. (ERIC Abstract, ED 024 650)

Minicourse 1, a short microteaching program designed to change 12 specific classroom behaviors involved in conducting a discussion lesson,

relies heavily on filmed illustrations by model teachers and provides feedback through carefully structured teacher self-evaluation of televised lesson replays. A study was designed (1) to estimate the degree to which practice in the microteaching format and feedback from the video tape replay influenced learning in the minicourse model and (2) to determine the effectiveness of the minicourse as a technique for changing the behavior of student teachers. Five groups of 15 to 17 student teachers from three teacher training institutions were subjects of the study. No variables appeared to influence their assignment to groups: three groups completed the entire minicourse, one was given all but the video tape recordings and replay, and one did no microteaching and received no feedback. Behavior change was measured by trained raters who scored coded 16-minute pre- and postcourse video tapes of each student teaching his entire class. The three research hypotheses were tested using a one-tailed t-test; all three were supported. In general, the groups that completed the entire minicourse made more and larger changes in behavior than the others; and several significant changes occurred in the methods of conducting discussion lessons.

Davis, O.L., Jr. & Smoot, B.R. Effects on the verbal teaching behaviors of beginning secondary teacher candidates' participation in a program of laboratory teaching. (AERA Paper Abstracts, 1969, pp. 112-113)

This study was designed to assess the effects of a Teaching Laboratory (TL) component on the verbal teaching behaviors of beginning secondary teacher candidates. The TL, based on micro-teaching procedures, is integral to the regular introductory course in secondary school teaching in a teacher education program. In the TL, candidates teach scaled-down lessons focusing on specific pedagogical tasks in a teach-re-teach cycle. Systematic feedback from pupils, instructor, and audio-recordings is available to the candidate. Pupils in the TL are peers.

Ss were 140 beginning secondary candidates enrolled in six sections of the first course in teaching in the professional sequence at The University of Texas at Austin. Ss in Group A (N=85) were enrolled in sections incorporating the TL component. Ss in Group B (N=55) were enrolled in sections which did not incorporate the TL. During the experimental period, Ss in Group A taught four TL lessons whereas Ss in Group B taught none. All Ss taught a ten-minute "pre-test." Following the seven week experimental period, all Ss taught a ten-minute "post-test." The criterion measure was the Laboratory Observation Schedule and Record (LOScAR), a modification of OScAR 5V developed by Medley and others (1968).

Twenty-two variables, consisting of the 13 LOScAR category scores and nine ratio scores, were analyzed by ANCOVA procedures. Results revealed significant differences ($p < .01$) between TL and non-TL groups on 18 of the variables. All differences were interpreted as favoring Ss with TL experience.

Findings are discussed with respect to the effectiveness and utility of the TL in regular teacher education programs and to the value of specific laboratory experiences prior to student teaching as means of enabling teacher candidates to become competent in interactive behaviors.

Fuller, F.F., & Others. Effects of personalized feedback during teacher preparation on teacher personality and teaching behavior. Final Report. Austin, Texas: Texas University, 1969. (ERIC Abstract, ED 028 148)

This five-year study gathered data on 174 prospective teachers through personality tests, self-evaluation forms, and sound films of student teaching behavior, and examined the effects of three kinds of psychological feedback on teacher preparation, personality, and behavior. Subjects were divided into four groups--one for control and three for feedback treatment, which involved minimally one or more personal interviews with a psychologist (Assessment Feedback). The first feedback group received only Assessment Feedback; the second, in addition to receiving Assessment Feedback, was permitted to view the sound films (Behavior Feedback); and the third, after receiving Behavior Feedback, was placed in student teaching situations judged maximally facilitating by observers. In general, students with feedback evidenced more self-confidence, classroom ease, and positive attitudes toward observation procedures. In regard to two propositions about feedback (students would become more receptive to pupil feedback and would increase characteristics related to effective teaching), changes were not observed between different treatment groups but rather between the beginning and end of preparation and between polled experimental and control subjects. Striking differences between elementary and secondary education majors were recorded. (A chapter on the related Mental Health in Teacher Education Project, 13 appendixes of measurement instruments, and a 45-item bibliography are included.)

Goodkind, T.B. An evaluation of the effectiveness of "micro-teaching" technique in the training of elementary school teachers. (AERA Paper Abstracts, 1968, p. 106)

The three general objectives of this study were (1) to develop and field test an adaptation of the "micro-teaching" technique for the on-the-job training of student teachers; (2) to determine the value of the small, portable videotape recorder in the training process; and (3) to obtain some quantifiable data to evaluate the "micro-teaching" concept in teacher training programs.

Forty students were selected from the University program, half of which were involved in "micro-teaching" with videotaping, and half without the videotaping. Each taught two short lessons of 4-8 minutes and two long lessons of 10-20 minutes to the elementary children in her student teaching class. The experimental group had their performances recorded on videotape for playback and evaluation with their University supervisors and cooperating teachers. The control group students had similar evaluation sessions, but without the addition of the videotape recordings. All students had the chance to reteach the same lesson after the evaluation session, followed by a second session.

The Medley-Mitzel Observation Scale and Record was used as the principal evaluation instrument as a systematic observational technique to record each trainee's classroom performance and behavior. The OScAR was administered by University supervisors four times during the student

teaching period to all students in the study. Anecdotal information and informal observations as well as student comments provided additional forms of data.

Preliminary evaluation of data has indicated that those students in the experimental group displayed (1) a greater awareness of specific personal habits and mannerisms; (2) a greater awareness of specific teaching acts and techniques, particularly of the non-verbal type; (3) greater insight into the activity and interrelationships of children within the classroom; and (4) a greater awareness of the problems of pacing in their instructional program.

Kallenbach, W. The effectiveness of microteaching in the preparation of elementary intern teachers. (AERA Paper Abstracts, 1968, p. 105-106)

All teaching candidates (N=40) in the 1967 San Jose State College Summer elementary intern teaching program were randomly divided into two groups. One group, the Microteaching Group, participated in a Summer microteaching program on campus with no off-campus contacts with students. The other group, the Student Teaching Group, participated in a limited Summer observation and student teaching program. Both groups otherwise had the same Summer program.

Pre- and post-Summer lesson excerpts (five minutes each) were videotape recorded for each of the candidates and these were independently judged, double-blind, by each member of two teams of trained evaluators. The evaluators used the Stanford Teacher Competence Appraisal Guide (STCAG) to judge the teaching skills from the videotaped recordings.

A field follow-up by two independent teams of trained evaluators made both a Fall and Spring assessment of each intern teacher. One team used STCAG and the other used Instrument for the Observation of Teaching Activities (IOTA). Each team member judged independently.

No significant differences in teaching skills or competence appeared between the two groups at the end of the summer programs or developed in the assessments during the school year. Judges' findings were found to be moderately but significantly correlated with some few exceptions. One team of judges found the Microteaching Group candidates significantly less able in teaching skills ($p < .05$) at the beginning of Summer but this difference did not appear at the end of Summer. This might appear to favor the Microteaching Group who, although they spent eighty per cent less time in teaching activities, reached comparable levels of teaching skills with the more able candidates in the ten-week Summer program, and these levels were maintained at an equivalent or higher level of competence throughout the school year.

The major contribution of microteaching as compared to Summer student teaching in an intern program is in the time saved in teaching activities by the microteaching program--over eighty per cent in this study.

Limbacher, P.C. A study of the effects of microteaching experiences upon student teaching classroom behavior. (AERA Paper and Symposia Abstracts, 1971, p. 64)

This study sought to evaluate the effectiveness of an on-campus program of videotaped microteaching experiences for teacher trainees.

Experimental and control groups, each comprising twenty-five social studies student teachers, were evaluated by pupil judgments of student teaching effectiveness during first and last weeks of teaching. Videotapes of these lessons were analyzed using Flanders' interaction analysis. Cooperating teachers' evaluations of "readiness" to teach were obtained.

Results showed significant differences in favor of experimental group on two measures of pupil evaluations, none on other instruments.

The study provides a practical demonstration of use of technological advances to evaluate on-campus training programs in the field.

McDonald, F.J., & Allen, D.W. Training effects of feedback and modeling procedures on teaching performance. Palo Alto, Calif.: Stanford University, 1967. (ERIC Abstract, ED 017 985)

This report describes a series of experiments to assess the usefulness of television recordings in improving teaching performance. Objectives of the study are (1) to compare the effects of self-evaluation of a teaching performance with feedback provided by a supervising instructor, (2) to compare the effects of reinforcement delay, and (3) to compare the effects of a perceptual modeling demonstration of a desired behavior with those produced by providing a written description of the behavior and to compare the effects of combining reinforcement with each. Each objective was the subject of a separate experiment conducted under highly controlled, laboratory-like conditions. It is concluded that the results of this study support the assumption that the rate and level of learning a given teaching strategy vary as a function of the mode of model presentation. There is evidence to indicate that perceptual modeling procedures are characterized by distinctive cuing properties which tend to recommend them over symbolic modeling procedures for use in training contexts analogous to those described in the experiment.

McDonald, F.J. & Koran, M.L. The effect of individual differences on observational learning in the acquisition of a teaching skill. Final report. Palo Alto, Calif.: Stanford University, School of Education, 1969. (ERIC Abstract, ED 032 291)

A study examined the effects of verbal and perceptual dimensions of individual differences in relation to the efficacy of two different kinds of modeling procedures in the acquisition of a teaching skill (analytic questioning). Aptitude tests for cognitive factors plus specially developed audiovisual tests were administered to 121 intern teachers randomly assigned to three treatment groups: a film-mediated modeling treatment (a filmed portrayal of analytic questioning); a written modeling treatment (a text of the film sound track); and a control

treatment which received no model, but went through all other steps including initial instructions and microteaching pretest and two cycles of models, rehearsal, and microteaching. The criterion performances assessed by trained raters included the frequency, variety, and quality of analytic questions used in three separate teaching sessions in addition to scores on two written posttests. Instructional treatment main effects as well as aptitude by treatment interactions were investigated using analysis of variance and comparison of regression slopes. Findings, which supported hypotheses, suggest that the rate and level of learning of a specific teaching strategy varies as a function of model presentation (film-mediated modeling most effective: no modeling least effective); and that the effectiveness of instructional methods varies from S to S with such differences being related to trainee aptitudes. (ED 017 985 and ED 028 892 are related documents.)

McKnight, P.C. & Baral, D.P. Microteaching and the technical skills of teaching: a bibliography of research and development at Stanford University, 1963-1969. Research and Development Memorandum No. 48. Palo Alto, Calif.: Stanford University, 1969. (ERIC Abstract, ED 030 621)

This 66-item bibliography on microteaching and the technical skills of teaching includes published and mimeographed materials, doctoral dissertations, and three films developed at the Stanford School of Education and Center for Research and Development in Teaching from 1963 through May 1969. Technical skills are defined as covering particular teacher behaviors (such as reinforcement, silence, probing, and higher-order questioning), general teacher behaviors (such as explaining), and specific skills required in the teaching of foreign languages and social studies.

Popham, W.J. The influence of highly specific instructional videotapes on certain cognitive and effective behavior of teachers. Los Angeles, Calif.: California University, 1966. (ERIC Abstract, ED 012 714)

Three groups of prospective teachers were differentially exposed to specially prepared tapes on four topics. Each 30-minute tape consisted of simulated classroom settings, with the last 10 minutes used as a posttest in which the viewer had to identify the principles under discussion. Group 1 received no relevant instruction on the topics, Group 2 received only modest written or audiotaped instruction, while Group 3 was exposed to the written or audiotaped material plus the videotapes. All three groups were given each of three posttests concerning the principles of the four instructional topics--(1) the video tape posttest segment, (2) a local written test, and (3) the Instructional Procedures Preference Inventory, which measures attitudes toward instructional principles. With respect to the videotape posttest, significant differences were found among the three groups on all four topics (the no-instruction con-

trol group scoring lowest, and the videotape group highest), but, on the other measures, the use of the videotape program yielded no significant differences. Further research is necessary to learn whether the obtained differences are reflected in actual teaching performance.

Salomon, G., & McDonald, F.J. Pre- and posttest reactions to self-viewing one's teaching performance on videotape. Palo Alto, Calif.: Stanford Center for Research and Development in Teaching, 1969. (ERIC Abstract, ED 028 989)

It was hypothesized that when no standard of "good teaching" is set for the self-evaluation of teaching performance, behavior changes and patterns of information selection would be determined by the teacher's satisfaction with his performance (the smaller the satisfaction, the fewer self-evaluating changes take place and the less teaching-related information is noticed). Each of 38 teacher interns, the subjects of this study, taught a 50-minute videotaped lesson for which no instructions on teaching standards had been provided. Immediately after the teaching session and again after viewing the tape of his performance, each student completed an attitude questionnaire consisting of eight concepts (categorized in two domains relating to the teaching situation, and two domains referring to the teacher's self-image) each rated on nine 7-point scales and had an interview to determine performance perception and satisfaction. On the basis of data collected before self-viewing, the videotaped performance record students were divided into low and high satisfaction groups and compared to determine if significant changes in concept ratings after self-viewing were due to predisposed satisfaction or dissatisfaction with the teaching performance. Results showed that when no model of "good teaching" is presented, reactions to self-viewing of teaching performance are determined largely by the viewer's predispositions. (A 15-item reference list is included.)

Schalock, H.D., & Beaird, J.H. Increasing prediction of teachers' classroom behavior through use of motion picture tests: final report. Monmouth, Oregon: Oregon State System of Higher Education, Teaching Research Division, 1968. (ERIC Abstract, ED 021 809)

The major portion of this report reviews a recent study that replicated and extended earlier research by Schalock, Beaird and Simmons (1964, ED 003 620) on the use of situation reaction tests (using motion picture representations of classroom situations as test stimuli) to predict teaching behavior in the classroom. Chapters I and II summarize the 1964 study which pretested 40 student teachers using a paper and pencil attitude scale plus 3 situation reaction tests with different response modes; scores were correlated with observational measurements of management behavior in the classroom during student teaching. Chapter III reports the replication study, extended to include situational data in the prediction scheme on 39 experienced and 39 student teachers.

Twelker, P.A. Classroom simulation and teacher preparation. The School Review, 1967, 75, 197-204.

This article describes the technique of classroom simulation and its use. A trainee undergoing the experience is presented with problematic situations filmed so that the class appears to be reacting directly to the student teacher who is viewing the sequences. Several alternative feedback sequences are available for each problem that shows the trainee how the children might react to his handling of the situation. Advantages of this technique are: (1) Discriminating cues. It enables the student to practice discriminating cues that signal potential problems requiring immediate attention. (2) Decision making. In simulating training, a student learns how to fill the role of the student teacher in the classroom by participating in a comparable role in the simulated situation. (3) Behavior modification. Laboratory simulation enables the student to look ahead. It helps him to discover some possible consequences of various actions that he takes in the classroom. It trains the student to become sensitive to feedback.

Despite difficulties involved in gathering data on the effect of simulation training on actual classroom performance, initial evidence indicates a transference of learning from the simulated to the real experience.

Twelker, P.A., & Wallen, C.J. Instructional uses of simulation--a selected bibliography. (ERIC Abstract, 1967, ED 019 755)

This annotated bibliography on the instructional uses of simulation is indexed for the convenience of the user. Only limited aspects of man-machine instructional systems are considered. Although most of the items are related to the instructional uses of simulation, some items are related to the design of instructional systems. The bibliography lists the very latest references available and purposely omits many of the older articles.

Vicek, C. Classroom simulation in teacher education. Audiovisual Instruction, 1966, 11, 86-90.

The purpose was to measure the effectiveness of a classroom simulator in providing adequate preclassroom experiences for teacher trainees. The classroom simulator consisted of three units: a simulated classroom, an equipment area and the simulator materials. A sixth grade classroom was simulated through the use of motion picture films and printed materials. The instructional materials consisted of 60 problem sequences dealing with five types of student behavior. Each contained alternative feedback sequences designed to show the student teacher the possible consequences of the handling of the problem.

The experimental group Ss completed seven hours of individual training in the simulator and two hours of orientation and testing. The control group experienced only the orientation sequence.

In the simulator posttest, significant differences were found between the experimental and control groups. In identifying classroom problems both groups did equally well, but the experimental group solved the simulated classroom problems significantly better.

A transfer test was administered in the sixth week of student teaching. A Classroom Observational Record Form was used to analyze classroom behavior. The trained observers found no significant performance differences between the experimental and control groups with regard to their awareness of problems existing or their effectiveness in responding to the problems. Significant differences were found in the application of principles used in solving classroom problems.

A confidence test administered to the teacher-trainees before and after the simulator experience revealed an increase in self-confidence in their own abilities to teach.

Young, D.A., & Young, D.B. The effectiveness of individually prescribed micro-teaching training modules on an intern's subsequent classroom performance. (AERA Paper Abstracts, 1969, p. 114-115)

The purpose of this study is to assess the effectiveness of individually prescribed micro-teaching training modules in the acquisition of selected teaching behaviors (pre-internship) and subsequent implementation of these behaviors in classroom teaching (internship). Two groups of twenty interns comprise the experimental groups. The control group begins their intern teaching assignment without the pre-internship micro-teaching program. The experimental group taught a diagnostic lesson at the beginning of the semester preceding their internship. This performance was analyzed using the Medley and Mitzel Observation Scale and Record and Hough's Observation System for the Analysis of Classroom Instruction. Based upon this assessment, a sequence of approximately four micro-teaching training modules was individually prescribed for acquiring specified teaching behaviors. Midway in the same semester, the Oscar and Hough instruments were administered again and another sequence of micro-teaching modules prescribed. The data are collected by administering the Oscar and Hough Observation System for Instructional Analysis on each intern's classroom teaching performance during the fourth or fifth week and again during the ninth or tenth week of the internship.

The data are analyzed by comparing the mean frequency and number of different specific teaching behaviors and patterns in a twenty-minute sample. Preliminary evaluation of the data indicates that the experimental group has acquired a greater number of specific teacher behaviors and teaching patterns.

Section IV. Observation, Measurement and Evaluation

Abramson, T. Performance-based certification and observation techniques. The City University of New York, Division of Teacher Education, April, 1971.

This paper describes some of the implications that the observation of classroom behavior has for performance based certification and includes a brief review of the state of the art of classroom observational methodology including some reliability and validity problems as well as some future research that should be undertaken.

Amidon, E., & Flanders, N. The role of the teacher in the classroom: a manual for understanding and improving teachers' classroom behavior. Minneapolis, Minn.: Paul S. Amidon Associates, 1963, pp. 57-62.

Research showed that students achieved more when the teacher used an indirect approach to clarify ambiguous learning goals, although most teachers use a direct approach. The indirect approach stimulates student participation and discourages dependence on the teacher.

The direct teachers did not use the communication skills involved in accepting, clarifying, and making use of the ideas and feelings of students as did the indirect teachers. The direct teachers needed to give more direction in order to keep their students working. This implies that the popular method of "getting tough" and telling students what to do does not increase learning.

This study also showed that flexibility or variability in teacher influence was characteristic of teachers whose students learned the most. The indirect teachers had more ways of working with students. They shifted their roles to be compatible with different students and subject matters.

Two of the teachers had not been trained in the subject area they taught. Although one of these classes showed the least achievement, the other class exceeded the achievement of classes whose teachers were better qualified. This implies that human relations and communication skills are factors in teacher effectiveness as well as subject knowledge.

The authors suggest that teacher education should include the following objectives: 1) the ability to use the social skills of accepting, clarifying, and using the ideas of students in planning lessons and diagnosing deficiencies; 2) knowledge of factors which inhibit or encourage student reactions; and 3) understanding a theory of teaching which can guide the teacher's behavior in guiding classroom communication.

The authors also suggest that prospective teachers be trained in interaction analysis so that they may take turns observing and teaching, trying out various patterns of influence and then discussing the resulting communication patterns. Observation can be a threatening experience for the practice teacher and requires a skillful and indirect approach by the supervisor.

Augenstein, M.B. Style is the teacher. A report of the teacher characteristics project, 1967-68. Miami, Fla.: Dade County Public Schools, 1968. (ERIC Abstract, ED 032 278)

The Teacher Characteristics Project, one of the five undertaken as part of the design of an individualized instructional system for Dade County Schools, was set up to study the role of the teacher in the new system. A survey of literature, research, and projected strategies pointed up these trends and generalizations: (1) a shift in emphasis from the teacher as presenter of information to the teacher as facilitator of conditions for learning; (2) a greater emphasis upon the preactive phase of teaching where the teacher must work with superiors, peers, and myriad sources of data to skillfully diagnose the child and expertly prescribe for his progress; (3) the phase of interactive teaching takes on the challenge of matching teaching style factors of influence management, relatedness, tone, and operational level to learning style of the pupil and learning activity at hand; (4) the teacher's growing role in the evaluative phase of teaching, where the teacher's style must induce objective interpretation of the system as a whole and of his own part in it. Products of the study include a set of operational definitions, a theoretical model for Individual Instructional Staff Assessment (Teacher Characteristics and Behavior Profiles), a Man-Machine Model of Instructional Behavior, and a Teaching Style Classification Scale for use in producing teaching style profiles. (The models and scale are included, plus discussion of implications for staff development and staff organization.)

Barr, A.S. The nature of the problem. Journal of Experimental Education, 1961, 30, 5-29. (Psychological Abstracts, 1962, 36, No. 5KM05B)

A critical overview of over 75 studies extending from 1924 to the present conducted by the staff and students at the University of Wisconsin. The main objective of these studies has been to explore ways and means of validating an objective approach to teacher evaluation. Many approaches and data gathering devices have been devised and employed: measures of pupil growth and achievement; tests and rating scales of qualities thought to be associated with teacher effectiveness; studies of teacher and pupil behavior and interrelationships; and tests of basic knowledges, attitudes and skills.

Bradley, R., & Others. Measuring teacher competence. Research backgrounds and current practice. Burlingame, Calif.: California Teachers Association, 1964. (ERIC Abstract, ED 040 152)

The many studies on teacher competence, usually biased toward specific viewpoints and concerned only with segments of the whole performance, demonstrate the need for a clearer definition. Methods used to determine effectiveness include measurement of pupil gains, job analysis, and pupil ratings of teachers, all subject to inherent fallacies and limitations. The California Definition, published in 1952 by the

California Teachers Association, has since been officially adopted by the state and identifies six teacher roles on the basis of the group or individuals with whom the teacher works. In 1950 the American Educational Research Association appointed a seven-member committee which established two general categories, relating directly to teacher effectiveness and to observable behavior and characteristics from which effectiveness may be inferred. In 1954 the American Psychological Association listed six categories: social validity, conceptualization, stability of the function, variability among the population, measurability, and ultimate-immediate relationships. An instrument developed at the University of Hawaii, using the California Definition as a base, is described with the suggestion that similar local instruments should be devised. An annotated bibliography is provided, as well as a detailed taxonomy of teacher roles from the California Definition.

Evaluation of teaching competence. National Education Association, Research Division. NEA Research Bulletin, 1969, 47, 67-75.

Three articles on the evaluation of teaching competence are presented. The first article "Administrative Practice," describes evaluation of practices in 213 school systems. Educational Research Service conducted the survey which found that 80 percent of the participating systems evaluate probationary teachers more often than continuing teachers. One hundred and ninety-nine of them conduct evaluations twice a year in the probationary status and 80 others have annual evaluations for probationers. More than one-half of the systems with a regular schedule of evaluations for permanent teachers make evaluations annually.

In more than one-half of the systems the principal is the only person who evaluates teachers. In other systems he receives assistance in the preparation of the form from his assistant principal, supervisor or department heads. In a few systems, the principal and at least one other person, each prepare an evaluation form for each teacher.

Two types of evaluation procedures were reported by the responding school systems. The difference between the two procedures are the degree to which the teacher may participate in the evaluation process. Type A includes the practice of "self-evaluation" which allows the teachers to participate in the actual evaluation. However, Type B provides an even greater degree of teacher participation because some of the evaluative criteria are determined by the teacher himself. He sets up realistic performance goals with his evaluator, who acts as a coach, and works towards them and later rates himself on how well he has attained his goals.

The different means for the teachers to learn about their evaluation results include receiving and signing a copy of the form, requesting a copy of the form, or seeing it in the personnel files. Most of the systems hold conferences also. Procedures for teacher appeal include requesting a conference with the evaluator's superior, initiating grievance, or attaching a dissenting statement to the form.

The second article, "Teacher Opinion," tells what teachers think about who should evaluate whom and for what purposes the teachers' performance should be evaluated. A nation-wide survey of public school

teachers indicated that most teachers feel they should be evaluated. Three-fourths of the teachers surveyed responded that both probationary and tenured teachers should receive regular evaluation. A higher percentage of secondary teachers than elementary teachers favored evaluation of both probationary and tenure teachers. Ninety-seven percent of the respondents agreed that the school principal should be responsible for teacher evaluation.

Some reasons as to why teachers should be evaluated include: to assist in improving teaching competence (92.8%); to make teachers more responsive to the needs of their pupils (56%). More men than women teachers favored evaluation for the purposes of dismissing poor teachers. More women than men teachers approved of evaluation to keep the administration aware of classroom activity.

The third article, "As an Item of Negotiation," gives information on the aspects of the evaluation of teachers contained in professional negotiation agreements. It includes examples.

Hill, R.A., & Medley, D.M. Change in behaviors of first year interns. (AERA Paper Abstracts, 1968, p. 333)

The study to be described was part of a larger project designed to try out a new instrument for observing and recording teacher behavior in the classroom. The subjects were seventy beginning teachers in a graduate teacher training program who were observed on the job during the second semester of their first year of teaching, twice in February and twice in May. This paper reports the results of an analysis designed to yield information about the behaviors of first-year secondary school teachers, changes in their behaviors over the semester, and relationships between teacher behavior and subject-matter being taught.

Two instruments were used: Flanders' Interaction Analysis Technique (FIAT) and Observation Schedule and Record 4 Verbal (OScAR 4V), one by each of two observers who visited the same teacher at the same time. OScAR was scored on 42 scales, FIAT on 44. Statistically significant overall changes were observed on 15 OScAR and 14 FIAT scales. Subject-matter differences were found on one OScAR scale and 8 FIAT scales. Thirty-seven OScAR scales and 38 FIAT scales discriminated reliably between teachers of the same subject and grade level, and 19 OScAR and 25 FIAT scales provided reliable measures of individual differences in changes over the semester.

The resulting quantitative patterns of behavior are compared with popularly held concepts of teacher behavior. Speculations are offered about the common sense significance of several new keys in both the OScAR 4V and the FIAT found to be reliable in discriminating between teachers and between subjects. Finally, the direction of change indicated by the differences between the observations at the beginning and the observations at the end of the semester are examined for hypotheses about the development of teacher behavior during early career experience.

Hill, R.A., & Medley, D.M. Goal oriented teaching exercise: methodology for measuring the effects of teaching strategies. (AERA Paper Abstracts, 1969, p. 107-108)

A Goal Oriented Teaching Exercise (GOTE) is a complex methodology for relating quantifiable patterns of teaching behavior to student gains. A GOTE consists of (1) a four-day teaching unit, (2) specific educational objectives for students, (3) tests to measure student gains toward the specified objectives, (4) suggested teaching strategies in behavioral terms, (5) instrumentation and procedures for recording teacher behavior, and (6) data analysis procedures for relating student gains to patterns of student behavior.

Teachers are asked to teach a unit of work for specified educational objectives. The unit content is organized along two dimensions, kinds of information (causes, effects, and so on) and levels of abstraction (facts, methodology and generalization), to form twenty-six content cells. Educational objectives are specified for each cell. Student gains are measured during the teaching unit by equivalent forms of a test, with items related to each content cell of the unit. Teacher behavior is recorded three ways--by process, by content, and by goal. Each statement of the teacher is coded (1) using the OScAR 5V for information about the teaching process, (2) by reference to the content cells of the total unit, and (3) by educational goals.

An initial GOTE has been developed and piloted. Four teachers taught the same content unit to two classes. In one of their classes, the goal was the "recall" dimension of Bloom's Cognitive Taxonomy; in the other class, teaching was focused on "application" of knowledge. Analysis of the data indicated that student gains differ both on the goal dimension and by different teachers. Teacher behavior data also distinguished between teachers, with twenty-nine of the sixty-four OScAR keys showing significant differences among teachers. There appears to be an interaction between measures of student gains, patterns of teacher behavior, and goal dimensions. Problems encountered and plans for future development of the methodology are outlined.

Justiz, T.B. A method for identifying the effective teacher. (AERA Paper Abstracts, 1969, p. 236-237)

Can a reliable measure of general teaching ability be developed from pupil achievement scores in two different subject fields?

Ten student-teachers in one senior high school and 7 in another were evaluated according to their pupils' achievement scores on problem solving objectives, first in News Story Structure Concepts, then in Punched-Card Computer Concepts. All student-teachers were unfamiliar with both subjects and were supplied with a packet containing the two subjects in "Kit" form. Each "Kit" contained an objective, related subject matter and practice exercises, with instructions for the student-teachers to prepare the two lessons overnight. On the following day, each student-teacher randomly selected 18 experimental pupils from his training-teacher's class (12 pupils in the second school), and escorted them to a testing area. Pupil groups were then reconstituted, and each student-teacher was assigned to the one classroom which did not contain

any of his own pupils. All student-teachers instructed, without supervision, for 30 minutes in each subject, then were given paper and pencil posttests and 15 minutes for testing, under close supervision. (Pupils were again reconstituted between lessons at one school.)

Each student-teacher was ranked according to the mean score of his class in each subject field. The two rankings were then correlated, using the Spearman Rank-Difference Correlation Method. The correlations were statistically significant at the .05 level of confidence at both schools (i.e., teachers who were effective in one subject were usually as effective in the second subject as well). This appears to be the first reliable measure of general teaching ability.

The student-teachers were also ranked according to their scores on the Minnesota Teachers Attitude Inventory (MTAI). The MTAI rankings were correlated with both subject rankings, and were significant at the .05 level of confidence at both schools. The MTAI thus appears to be a reliable predictor of the student-achievement producing abilities of student-teachers.

McNeil, J.D. Concomitants of using behavioral objectives in the assessment of teacher effectiveness. Journal of Experimental Education, 1967, 36, 69-74.

McNeil performed three studies to learn the consequences of evaluating teachers' performance by pupil achievement of goals pre-selected by the teacher and supervisor.

In the first study, the experimental group negotiated with the supervisor, what would be considered teacher success in terms of pupil gains while the control group concentrated on familiarization with pupil level and preparing lesson plans. After two days of teaching, the experimental group were rated by their supervisors as more successful in terms of pupil achievement and in demonstrating the principles of learning. Both groups were rated comparably in poise and personality.

The second study involved evaluation of teachers' ability to teach punctuation skills. The experimental group were told they would be judged on their ability to select appropriate changes in students' behavior and to elicit those changes.

The experimental group expected to be judged on the materials and methods they used in teaching. The posttests showed that the students of experimental group teachers achieved significantly greater gains in both the skills in which they had been deficient and overall punctuation skills.

The third study was a questionnaire given to the prospective teachers in the second study which asked how they would prefer to be evaluated as teachers. The experimental and control students both answered almost unanimously (98%) that they preferred to be judged on pupil gains (the results of their teaching rather than the techniques).

Medley, D.M. Some notes on validating teacher selection procedures. New York, N.Y.: New York City Board of Education, 1967. (ERIC Abstract, ED 014 445)

At present, the part of any teacher effectiveness criterion that can be predicted with a selection test is probably irrelevant to

teacher competence. Testing the validity of predictors of teacher competence is impossible because it would require hiring a sizable random sample of all who apply for positions, without prior screening. Further, teacher aptitude tests wrongly assume that the factors in successful teaching operate prior to the start of teaching in a specific school or school system. Instead, teaching behavior probably varies with the teaching situation. Accordingly, an achievement rather than a predictive model should be used in hiring new teachers. Past learning (e.g., as measured by college grades) is one such measure. Teaching performance is another achievement measure. That is, if, after one year, the probationary teacher has not learned to teach, he should not be rehired.

Mitzel, H.E. Criterion problems in validating teacher selection policies and procedures. New York, N.Y.: New York City Board of Education, 1967. (ERIC Abstract, ED 014 466)

In discussing a reliable and valid preservice predictor of teaching effectiveness, it is noted that most teacher selection procedures depend solely on paper and pencil measures of verbal and symbol manipulation ability. Therefore, a new multivariable evaluation procedure is offered. It consists of (1) developing empirical descriptions of classroom performance by systematic recording of the observable behavior of already employed teachers, (2) constructing a comprehensive sample observation instrument from the data obtained by step 1, (3) administering the sample observation device to all teacher candidates in a naturalistic classroom setting (e.g., student teaching) several times, (4) employing all candidates (necessary for validation of instrument), (5) systematically observing and scoring the behavior of all in the sample, (6) using the data obtained to rank order the sample and establish a trial score differentiating between a satisfactory and an unsatisfactory group, and (7) analyzing the pre-employment and employment rating of individuals to test the predictive value of the instrument.

Moore, T.J., & Neal, W.D. The evaluation of teaching performance. Journal of Educational Administration, 1969, 7, 127-136. (CIJE Abstract, EJ 015 764)

Presents the results of a teacher evaluation research project in Australia.

Ramirez, J.V. Teacher behavior in role-playing: a study of interaction analysis. Research and Development Memorandum No. 43. Palo Alto, Calif.: Stanford Center for Research and Development in Teaching, 1969. (ERIC Abstract, ED 028 998)

An analysis of the teacher behaviors conducive to successful student role-playing was made. Four teachers experienced in role-playing participated in 10 videotaped role-playing sessions with sixth grade students. Using the Flanders system, an overall interaction matrix was constructed based on data gathered from three of the 10 sessions. Also,

to test for significant differences among four sequential teacher role-playing functions (derived from a grouping of teacher behaviors), separate interaction matrices were formed for each: Teacher-dominated interaction to acquaint the students with the problem (warm-up), balanced student teacher interaction as the problem is explored (discussion), student-dominated interaction in role assumption and problemsolving (role-playing), and balanced interaction in reviewing major ideas derived from the session (summary). For control purposes, similar student-teacher interaction matrices from a previous study were obtained and contrasted with the overall and the role-playing function matrices. Results of analyses showed significant differences between the four role-playing functions, and in student teacher interaction between the conventional classes and the role-playing classes when analyzed for role-playing function. However, no significant overall differences in interaction were found between the two types of classes.

Rhodes, F.G. & Peckham, D.R. Evaluations of beginning teachers: pointers and opinions. Journal of Teacher Education, 1960, 11, 55-60.

The purpose was to learn what items school administrators employing teacher education program graduates believe to be most pertinent in the college supervisor's written evaluation.

Thirty-one school administrators in Southern California rated the importance of items on a four-point scale. The three highest ranked personal qualities were emotionally poised, health and vitality, enthusiasm and forcefulness. Courtesy and tact was also considered important. The three highest ranked professional competence items were ability to plan and motivate lessons, development of pupil morale, and knowledge of basic skills and attention to individual differences.

The administrators preferred specific statements with illustrations to general statements. They wanted to know personal as well as professional characteristics and also special interests and talents of the teacher. To an open-ended question about what they would most like to know the largest group responded "emotionally mature and well-adjusted person," and "alert and enthusiastic." The most often suggested improvement for written evaluations was to give a frank and specific evaluation of both strengths and weaknesses.

Rosenshine, B. The stability of teacher effects upon student achievement. Review of Educational Research, 1970, 40, 5, 647-662.

A review and discussion of nine studies of the consistency of teacher effects across two intervals with suggestions for further research. The author defines teacher effects as residual class mean achievement scores in which posttest scores were adjusted by regression using a measure of prior achievement or aptitude.

The highest positive correlations (r's = .22 to .70) and highest percentage of significant results were obtained in the short-term studies in which teachers taught the same material to different students. Positive and consistent correlations were also obtained in the long-term

studies in which teachers taught the same material to different students.

The correlations were not consistent (r's = -.43 to .49) or significant when teachers taught different materials to the same students. The correlations were also inconsistent (r's = .45 to .82) with few being significant when teachers taught different materials to different students.

Ryans, D.G. Criteria—problems in validating teacher selection policies and procedures. New York, N.Y.: New York City Board of Education, 1967. (ERIC Abstract, ED 014 465)

The various weaknesses, difficulties, and "common confusions" that have characterized the criteria used in teacher selection procedures are identified, and suggestions for improvement are made. Ten steps in the development and evaluation of procedures are outlined--from identification of locally varying expectations arising from varying values (e.g., is the teacher to be permissive or a disciplinarian) through drawing inferences about the validity of the procedures for predicting the (operationally defined) criterion behaviors. Criteria must be clearly distinguished from criterion measures. Problems of the validity and generalizability of criterion descriptions and of the validity and reliability of procedures for estimating criterion behaviors are discussed (e.g., is the behavior uni- or multidimensional, are the dimensions discrete, representative, generalizable, replicable). A variety of approaches to judging the validity of criterion estimates and to describing criteria are given, and six yardsticks for judging the usefulness of a criterion description are outlined. The most valid of several methods of obtaining criterion estimates uses samples of the ongoing criterion behaviors and direct estimation based on observation of them in process.

Saadeh, I.Q. Teacher effectiveness or classroom efficiency: a new direction in the evaluation of teaching. Journal of Teacher Education, 1970, 21, 73-91.

Saadeh reviews the literature and points to the evidence that 50 years of prolific research has not produced validated methods for teacher selection, training, or evaluation, nor even established validated criteria of teacher effectiveness. He says that the criteria for teaching effectiveness should be teacher production of desired pupil outcomes, not teacher behavior or behavioral correlates in the process of teaching as others have proposed.

He surveys the research on the teaching-learning process from concentration on one variable (teacher characteristics, personality, method, or behavior) to analysis of the interaction between teacher behavior and effects (in terms of verbal behavior, emotional control or group leadership). Saadeh prefers to examine the interaction (intervening variables) between the antecedents (elements of the structure of the teaching-learning process as independent variables) and the consequences (pupil outcomes as dependent variables) by means of systems analysis.

He lists his assumptions underlying the nature of the teaching

profession and his necessary criteria for a promising design of teaching effectiveness. He explains his own model for classroom efficiency appraisal, its criteria and components, and the method of analysis he proposes (i.e., regression analysis).

Scott, M. Teacher effectiveness: a position. Nashville, Tenn.: George Peabody College for Teachers, Demonstration and Research Center for Early Education, National Laboratory on Early Childhood Education, 1969. (ERIC Abstract, ED 039 928)

This document summarizes the highlights of research on teacher effectiveness and concludes with recommendations based on a synthesis of this past work. The various methodologies that have been used are discussed, from rating scales to objective observation techniques, such as OScAR and the ecological studies. The major problems in teacher effectiveness research are examined. Recommendations are that results of: (1) research on presage variables are conflicting suggesting that such research might be suspended for the moment; (2) clearer guidelines regarding ultimacy of product criteria are needed; (3) observational techniques seem to be more behaviorally oriented and more objective than other methodologies; (4) an attempt should be made to integrate, translate, and relate already available materials on teacher effectiveness; and (5) the sub-segments of teacher effectiveness should be understood and quantified before researchers try to unify the whole.

Tuckman, B.W. The development and evaluation of techniques to assess teacher directiveness. (AERA Paper Abstracts, 1968, pp. 11-12)

The purpose of this investigation was to develop and validate a measure of teacher directiveness for use with students.

An extensive literature search was undertaken to identify scales that have already been built to measure the teaching style which we have labelled "directiveness." The results of this search encouraged our belief that students were reliable judges of teacher behavior, but led us to the decision of developing our own scale since those in existence failed to separate directiveness and negative affect (i.e., warmth-coldness).

Starting out with a detailed operational definition of directive teaching, three scales were constructed: (a) Student Perception of Teacher Style (SPOTS), (b) Observer Rating Scale (ORS), (c) Teacher Style Checklist (also an observer measure but differing in format from (b)).

Twenty-two teachers in two vocational high schools were observed by two observers who each completed both observer measures for each teacher. All of the students in a single class of each teacher completed the SPOTS and each teacher completed a personality measure developed by Tuckman, called the Interpersonal Topical Inventory (ITI), which is a measure of personality structure ranging from concrete-dependent to abstract-independent.

The judgments of the two observers on each of the rating scales had a corrected reliability of about .80 (the observers only observed

each teacher once); the ratings were subsequently pooled to form a consensus judgment, on each scale. The agreement between the two observer measures was high (r = .78). Furthermore, a strong relationship was obtained between the Checklist score and the ITI; abstractness score (r = .59) indicating that the more abstract a teacher was, the more non-directive he was. This finding is consistent with others that have been recently reported in the literature.

The relationship between the student measure and observer measures were not as high as expected. The more accurate of the two observations on the Observer Rating Scale correlated .53 with the mean judgments on the SPOTS. Moreover, of the 22 teachers observed, the ORS and SPOTS would lead to the same classification, i.e., directive or non-directive, on 15 of them.

Extensive internal analyses were undertaken on the student measure. The SPOTS was found to be reliable, i.e., the correlation between the tenth most accurate student and the total score across all students was .69 indicating high inter-student agreement. Item-whole correlations were significant for all but eight of the 32 SPOTS items. Finally, a factor analysis indicated a strong 14 item factor which appeared to be "pure" directiveness with other smaller groupings having less meaning.

Verduin, J.R., Jr. Conceptual modes in teacher education: an approach to teaching and learning. Washington, D.C.: American Association of Colleges for Teacher Education, 1967.

Thirteen systems for studying teacher education are described. Included are the models developed by Smith, Taba, Flanders, Bellack and Gallagher which have been adapted and used in observation research.

Washington, E. The expert teacher action study: a new approach to teacher evaluation. Journal of Teacher Education, 1970, 21, 258-263.

The Expert Teacher Action Study (ETAS) is a new approach to teacher evaluation being developed by teachers and administrators in California. Teachers and administrators are required to work together intensively in long-range team efforts. Each team is required to 1) analyze and criticize twenty-five criteria for teaching expertness; 2) complete man-in-motion studies of filmed classroom action; 3) conduct team observations of teachers in their own classrooms; 4) hold confidential conferences with teachers observed; 5) plan and carry out long-range programs of self-evaluation.

Records indicate that teachers and administrators quickly gain a high degree of sensitivity to both evaluation and self-evaluation. Teachers become perceptive of their own actions, develop objectivity, adapt their behavior to meet criteria. Teams of teachers and administrators working together achieve a high degree of accord and teachers voluntarily request evaluation sessions with their administrators. In team observations of classroom teaching 90 percent agreement was reached among five observers.

Five basic premises are taken into consideration: 1) the major purpose of evaluation is to assist the teacher to improve classroom

instruction; 2) any purposeful behavior can be evaluated by an expert observer who knows what the performer's goals are; 3) each teacher and classroom is unique and therefore each is to be evaluated according to the accepted criteria with no comparison with any other classroom or teacher; 4) self-evaluation by the individual teacher is the ultimate objective of evaluation; 5) evaluation is different from rating on shared responsibility between teacher and principal for both process and product is included.

A criterion and a process is provided by ETAS. The criterion encompasses twenty-five critical variables, each divided into five descriptive statements representing a level of teaching expertness within that particular variable. When a teacher's performance is evaluated, the observer focuses on two or three variables on each of several classroom visits. A teacher is usually evaluated and evaluates himself on ten to twelve variables.

The teacher tells the principal when he wants to be observed and they decide which variables are to be emphasized. After the observation, the teacher and principal have a conference about the chosen variable.

Records indicate that teachers increase their expertness two full levels on the variables they select. An unexpected finding was that almost every teacher studied improved from one to two levels on four or five additional variables on which they had not been focusing. The ETAS has also found that many outstanding teachers have a tendency to be over modest.

Section V. Research on Teacher Characteristics

Carline, J.L. An investigation of the relationships between various verbal strategies of teaching behavior and achievement of elementary school children. (AERA Paper Abstracts, 1970, p. 81)

Objectives of this inquiry were: (a) determine the effect of an in-service training program on selected teacher verbal behavior; (b) to determine the relationship between selected teacher verbal behaviors trained for in the in-service training program and pupil achievement in arithmetic.

The teachers and pupils in one of two elementary school buildings were designated as the experimental group and those in the other building as the control.

From an analysis of the findings the following conclusions can be stated: 1. an intensive in-service training program can cause teacher change in a predicted direction; 2. training teachers to elicit significantly more indirect verbal patterns does not cause the children of those teachers to achieve at a [illegible] higher than children who have teachers not so trained.

An examination of the results of the test on the pupil achievement hypothesis, which was rejected, failed to show any connection between changed teacher behavior and increased pupil achievement.

Coats, W.D., & Smidchens, U. Audience recall as a function of speaker dynamism. Journal of Educational Psychology, 1966, 57, 189-191. (Journal Abstract)

Various relationships among speaker dynamism, grade threat, individual speaker, and immediate recall with respect to a sample of 184 college speech students were explored. The data were analyzed by means of a 3-factor, fixed-effects analysis of variance and the w^2 test for strength of association. The only relation which was both significant and strong was between speaker dynamism and immediate recall of the speech by the audience. The relation produced a significant F ratio at the .001 level and had a strength of association (w^2) of .36. It was concluded that audiences remember more from a dynamic lecture than from a static lecture.

Conners, C.K., & Eisenberg, L. The effect of teacher behavior on verbal intelligence in "operation headstart children." Baltimore, Md.: John Hopkins University, School of Medicine, 1966. (ERIC Abstract, ED 010 782)

Classroom observations of 38 Headstart teachers, taken on four occasions by four different observers, were scored for such content characteristics as (1) amount and kind of communication with the children, (2) stress on obedience or intellectual values, and (3) physical-motor skills. These scores were compared with the children's intellectual

growth during the 6-week program as measured by the Peabody Picture Vocabulary Test. Children were found to respond positively to teachers who concentrated on intellectual activities, but showed little verbal growth in classrooms where teachers stressed "materials and property." When there were many teacher communications, IQ increased, although those communications that were corrections and obedience directives produced a smaller increase. Teachers who were scored as "warm, active, varied, and flexible" also contributed to IQ development. The results suggest that when children are rewarded by a warm teacher response they adopt the teacher's values.

Emmer, E.T. The effect of teacher use of student ideas on student verbal initiation. (AERA Paper Abstracts, 1968, pp. 12-13)

To determine whether increased teacher use of student ideas would produce increased student verbal initiation, an experiment was conducted in sixteen second grade classes. Flanders' Interaction Analysis categories were used to code teacher and student talk. Teacher statements which clarify, expand upon, accept or make use of student ideas are coded as teacher use of student ideas; pupil talk which is voluntary, going beyond the teacher's requirements, is coded as student initiation.

There were three stages in the experiment: I. Baseline observations of classroom interaction were made for five half days, under normal conditions. II. Observations were made during two 20-minute periods in which the teachers attempted to elicit student initiation in any way they felt was appropriate. III. Observations were made during two more 20-minute periods in which the teachers attempted to elicit student initiation. One group of teachers was asked to attempt specifically to use student ideas more often; the other group was not given this instruction.

Topic and the sequence of presentation of the topics were randomized during II and III.

The results indicate that teachers who increased their use of student ideas during II and III, as compared to the Baseline observations in I, elicited a significant increase in student initiation. Also, teachers who increased their use of student ideas in III, compared to II (this comparison being controlled for topic and sequence of presentation), elicited a significant increase in student initiation. However, teachers who decreased or remained stable in their use of student ideas did not elicit an increase in student initiation. Changes in student initiation were unrelated to other types of teacher talk (e.g., praise, asking questions).

It was concluded that increased teacher use of student ideas produced increased student initiation.

Flanders, N.A., & Havumaki, S. Group compliance to dominative teacher influence. Human Relations, 1960, 13, 67-82. (Psychological Abstracts, 1961, 35, No. 7013)

High school students were divided into experimental groups in which teacher attention was directed to individuals or to the group as a whole. The results support the following hypotheses: (a) the individual approach

will result in greater compliance than the group approach, (b) group cohesiveness will be lower with the individual approach, (c) dependency on the teacher is higher in the individual approach, and (d) compliance increases when students perceive that others are changing their opinion in response to the teacher's pe suasion.

Flanders, N.A., & Simon, A. Teacher effectiveness. In R. Ebel (Ed.), Encyclopedia of Educational Research (fourth Ed.). Toronto, Ontario: The MacMillan Company, 1969.

Provides a brief summary of recent reviews on effectiveness. The major portion of the article discusses research investigating the relationships between classroom behavior and other variables. The review is organized around Mitzel's categories of criteria: presage (characteristics of the teacher before teaching starts), process (teaching acts) and product (educational outcomes).

Gage, N.L., & Others. Explorations of the teacher's effectiveness in explaining. Technical report No. 4. Stanford, Calif.: Stanford Center for Research and Development in Teaching, Stanford University, 1968. (ERIC Abstract, ED 028 147)

This document presents four correlated studies based on (1) the concept of "micro-criteria" which narrows the dimensions of investigating teacher effectiveness through the variable (explaining), the potential correlates (classroom behavior), and the rating of effectiveness (pupil achievement) and (2) data from an initial experiment in which 12th grade teachers taught two 15-minute lessons to their pupils who subsequently took a comprehension test and rated teachers and themselves on performance with an adapted Stanford Teacher Competence Appraisal Guide and Attention Test. Study 1 emphasizes the statistical methods used in determining the reliability, generality, and correlation (all found to be positive) of teacher effectiveness and performance. Study 2 investigates which type of lesson recording would yield ratings closest to actual classroom ratings and which teacher behaviors pupils observed with a free-response instrument. The latter investigation's finding, that good teaching and cognitive activities are consistently related, is supplemented in study 3 which categorizes 27 teachers' behaviors (such as rule-example-rule presentation) in an attempt to apply objective measurement to rating teacher effectiveness. The final study discusses the use of computer programs to improve reliability in boring or complex tasks such as word counting.

Herman, W.L., Potterfield, J.E., Dayton, D.M., & Amershek, K.G. The relationship of teacher-centered activities and pupil-centered activities to pupil achievement and interest in 18 fifth-grade social studies classes. American Educational Research Journal, 1969, 6, 227-240. (Journal Abstract)

Teachers, matched according to their verbal behavior, were randomly assigned to teacher-centered and pupil-centered activity treatments for

above average, average, and below average classes. At the conclusion of the six weeks unit the treatments were reversed. Analysis of variance of pre- and posttests of achievement and posttests of interest in social studies revealed no statistically significant differences between the sex, level of the group, and treatment. The findings suggest that the considerable volume of material which implies that pupil-centered instruction produces greater achievement and interest than teacher dominated modes requires careful appraisal.

Johnson, J.A., & Radebaugh, B.F. Excellent teachers--what makes them outstanding? The Clearing House, 1969, 44, 152-156.

The purpose was to identify a group of excellent teachers and find out what characteristics make them outstanding. Students, teachers, and administrators in four Northern Illinois public senior high schools were asked to list the teachers in their school whom they considered outstanding. A questionnaire was given to the teachers most frequently listed and a chi-square analysis made of the replies.

The only variable significant at the .01 level was that excellent teachers tended to use classroom discussion techniques more often than other teachers. Significant at the .05 level, excellent teachers tended to be males, older, have more teaching experience, devote more time to teaching, vote, agree that investigation and critical thinking are the means to the truth, agree that unpopularity of an idea is no reason to reject it, agree that citizens should examine and evaluate the policies of high government officials, and use audiotapes or programmed materials less frequently than other teachers. Variables significant at the .10, .20, and .30 levels were also reported as well as those variables found not to be related to teaching.

High correlations were found between the excellent teacher listings of students, teachers and administrators (.31 - .68).

Kelley, M.L. Teacher behaviors that improve the pupil's use of language. (AERA Paper Abstracts, 1970, p. 57)

The objective of this inquiry was to determine whether Minicourse 2 could bring about significant changes in the teacher effectiveness in fourteen teaching skills designed to stimulate language in children from minimal language backgrounds.

The sample consisted of 47 kindergarten teachers drawn from 4 school districts. For each teacher four ten-minute language lessons were videotaped before and after teachers had taken the course. These videotapes were analyzed by trained observers using a double blind technique. The experimental treatment consisted of Minicourse 2, which is built around the minicourse instructional model described in Dr. Borg's presentation. Specific behaviors covered in this course include the use of specific praise, refining and extending children's utterances, modeling positional words and action words in conjunction with demonstrations, eliciting pupil use of modeled language.

Analysis of the pre- and post-course videotapes revealed that teachers made significant increases in all of the fourteen specific

teaching skills presented in the course (.01 or better). In the case of 8 skills, these gains were significant beyond the .001 level and represented substantial differences in the teacher's language instructional techniques.

This study indicates that substantial changes in actual teacher behavior can be made in the critical area of early language development.

Lawler, E.S. Differing rates of progress of classes under the same and different teachers. Journal of Educational Research, 1964, 58, 84-86.

Lawler studied 98 fifth grade teachers in Dade County over a three year period. Effectiveness criteria were pupil gains. Classes of the typical teacher varied more in gain from year to year than the teachers varied among themselves. There was a significant difference between the 10 highest on the performance index used and the 10 lowest. The high group considered themselves firm in discipline and assigned more pupil work, but this difference was not significant. Principals assigned the same ratings to both groups of teachers.

Lawson, D.R. Indicators of teacher ability to relate to students. (AERA Paper and Symposia Abstracts, 1971, p. 31)

The purpose of the study was to find teacher behaviors which correlate significantly with a criterion measure of teacher ability to relate to students. Videotapes of 50 teacher interns were shown to 100 high school students of three different ethnic backgrounds. Teachers were rated on ability to relate to students. Subsequent interaction analysis of videotapes identified 51 potential teacher behavior correlates, fifteen of which were found to correlate significantly with teacher ability to relate to students. No significant differences were found among mean teacher relatability scores by main effects of race and sex of student raters.

Mastin, V.E. Teacher enthusiasm. Journal of Educational Research, 1963, 56, 385-386.

The purpose was to determine whether pupils are likely to learn more from teachers who appear to be enthusiastic about what they teach than under teachers who are indifferent. A study was also made to determine the degree to which pupil attitudes are affected by the attitudes of their teachers and the relationships between intelligence and reactions to the contrasted attitudes and presentations.

A teacher presented an illustrated lesson to his class as if he felt indifferent toward the lesson and the subject matter. An objective test to determine what facts had been learned was administered to the pupils along with an attitude scale to determine how they felt about the lesson, subject, the teacher's work, and how much interest they had in learning more. The same teacher also presented a lesson as if he were enthusiastic about the lesson and the subject matter and an

objective test and attitude scale were administered to the pupils.

Twenty sixth and seventh grade classes, composed of 561 pupils, participated. The selection of teachers was left to chance.

Analysis of the data revealed that the class mean for the lesson taught with apparent enthusiasm, whether presented first or second, was higher for 19 of the 20 classes than the mean of the lesson presented with indifference.

An analysis of the individual scores showed that 435, or 77.54 percent of 561 pupils made higher scores on the test following the enthusiastically presented lesson. One hundred and two, or 18.18 percent made higher scores on the test following the indifferently taught lesson and 24 or 4.28 percent scored the same on both.

Data from the Otis Quick Scoring Mental Abilities Test indicated that the experiment furnished no evidence of significant relationships between individual intelligence, as measured, and reactions to the contrasted presentations.

Three hundred eighty-one or 67.91 percent of the pupils gave the enthusiastic teacher higher scores on the statements of the teacher section of the attitude scale.

McKeachie, W.J., & Others. Research on the characteristics of effective teaching. Final report. Ann Arbor, Mich.: Michigan University, 1968.

Study of what teaching styles are effective with particular types of students. Among the results were: (1) students with a greater need for affiliation learned more from a friendly teacher and students with less need for affiliation learned more from an impersonal teacher, and (2) less tension and greater student satisfaction was produced in a cooperative, rather than a competitive classroom.

Medley, D.M., & Mitzel, H.E. Some behavioral correlates of teacher effectiveness. The Journal of Educational Psychology, 1959, 50, 239-246.

Five measures of effectivensss--adjusted reading growth, growth in group problem-solving skill, pupil-teacher rapport, teachers' self-rating, and measures of three dimensions of classroom behavior--were obtained on 49 beginning teachers. The results were analyzed with statistical controls on differences between schools and classes within schools. The five measures of effectiveness were found to center around two distinct aspects of effectiveness: (1) Supervisory ratings and pupils' reactions to their teachers appeared to reflect the teacher's ability to get along with children. (2) Teachers' self ratings and measures of pupil gains (in reading and social skills) appeared to reflect effectiveness in stimulating pupils to learn to read.

No connection was found between recorded classroom behaviors of teachers and pupil gains. Pupil-teacher rapport was found to be related to emotional climate and probably to verbal emphasis in classroom behavior. Supervisors rated teachers who had the friendliest classrooms as most effective. Teachers who rated themselves most effective in teaching fundamental skills tended to give less opportunity for group work.

Mierhenry, W.C. Media competencies for teachers, a project to identify competencies needed by teachers in the use of the newer media and various approaches to achieving them. Lincoln, Neb.: Nebraska U., Lincoln Teachers College, 1967. (ERIC Abstract, ED 012 713)

This report contains seven papers dealing with competencies needed by teachers in the use of newer media. They are--(1) Robert Heinich's "The Teacher in an Instructional System," which deals with systems analysis and its role in the teaching-learning process, (2) Kenneth Norberg's "Theoretical Background Required by Teachers in the Use of Newer Media," which explores the relationship of a number of learning, perception, and communication theories to media, (3) Vernon Gerlach's "Selecting an Instructional Medium," which represents the application of a response-oriented instructional system in a specific way, (4) and (5) David Curl's "Self-Instructional Laboratories for Teaching Operational Skills" and Jerrold Kemp's "Identification of Pre-Service and In-Service Teacher Competencies in the Area of Audiovisual Production Techniques," both of which are applications of production and operational skills in the field of media, (6) Gerald Torkelson's "Competencies Needed by Teachers in the Use of Newer Media and Various Approaches to Achieving Them," which advocates the establishment of a new learning-based teacher preparation program, and (7) the author's "Media Competencies for Teachers," which draws on the previous papers to propose a program for the development of teacher competencies. These competencies are (1) understanding of educational theory, (2) instructional sequences, and (3) material production and equipment operation.

Miller, G.L. Collaborative teaching and pupil thinking. Journal of Teacher Education, 1966, 17, 337-358.

A comparison of noncollaborative teaching which is highly prescriptive and directive (little attention is paid to cues emitted by the learners) and collaborative teaching which is flexible and responsive to learner emitted cues. The purpose was to determine whether directive teaching was accompanied by less educative learner responses than collaborative teaching.

A theory of instruction is given: a teacher's activities including working on content or task and maintaining social order (each of which can be directive or responsive) and facilitating (which is neutral on the directive-responsive scale).

One hundred seventh and eighth grade pupils were divided into two treatment groups (directive and responsive) and taught ten lessons on American economics. Teacher comments were coded on the responsive directive scale and pupil comments were coded on four levels of understanding: recognition or recall and three levels of inference, error and procedural comments. Pupil attitude and mastery of content facts and meanings were measured with paper-and-pencil instruments.

The results showed significant (at the .001 level) differences in levels of understanding during discussions. The responsive treatment produced higher levels of understanding but also produced greater pupil error. Students in the responsive treatment group also showed a significantly greater number of more positive attitudes toward the study than

those in the directive treatment group.

There were no significant differences (at the .05 level) between the two groups when mastery of facts and level of understanding were measured by objective achievement tests.

The meaningfulness of the results may be lessened by the fact that analysis of the teachers' comments showed that the responsive treatment groups' teachers found it easier to be directive and did not satisfactorily present the responsive method.

Mitzel, H.E. Teacher effectiveness. In C.W. Harris (Ed.), Encyclopedia of educational research. (3rd Ed.) New York, N.Y.: Macmillan, 1960.

Mitzel discussed the following topics relating to criteria of teacher effectiveness: important attributes of criterion measures, a classification of criteria (product, process and presage criteria), and issues pertinent to criteria selection.

Moody, W.B., & Bausell, R.B. The effect of teacher experience on student achievement, transfer and retention. (AERA Paper and Symposia Abstracts, 1971, p. 33)

Experienced teachers were compared to inexperienced non-teachers on the criterion of elicitation of original learning, transfer, and retention in exposed fourth and fifth grade students. Fifteen teachers and 15 non-teachers each instructed one class of fourth or fifth grade students in certain specified objectives in modular arithmetic. A comparison of the class means of the two groups revealed no significant difference in amount of learning, transfer, or retention effected between teachers and non-teachers.

Moskowitz, G. The attitudes and teaching patterns of foreign language student teachers trained and not trained in interaction analysis. (AERA Paper Abstracts, 1968, p. 335-336)

The purpose of this study was to compare the attitudes and teaching patterns of a group of foreign language student teachers who were trained in interaction analysis with a group not so trained. Attitudes examined in the study were: (1) the student teachers' attitudes toward teaching and (2) toward their cooperating teachers; (3) the cooperating teachers' attitudes toward these student teachers; (4) the attitudes of the foreign language pupils toward the student teachers; and (5) foreign language as taught by them.

This study, conducted at Temple University, was carried out in the Fall semester, 1966, and replicated in the Spring semester, 1967. The subjects were all the foreign language pre-service teachers taking student teaching in either semester (N=32). Each semester, an experimental group took a course in which they received training in interaction analysis, while a control group did not receive this training. After the experimental groups had received the training in interaction analysis, reliable observers who were trained in both foreign languages and

interaction analysis, using the latter, coded two live classroom lessons of each student teacher: a grammar and a conversation lesson. In addition, appropriate questionnaires were administered to all subjects and their cooperating teachers and pupils to assess the aforementioned attitudes.

At the end of the training in interaction analysis, when compared with the control group, the experimental group: 1. taught both grammar and conversation lessons by using a variety of patterns which were more indirect; 2. had more negative attitudes toward their cooperating teachers, who did not know interaction analysis; 3. had pupils who perceived them and foreign language study more positively.

It appears as though training the foreign language student teachers in interaction analysis was related to their developing: 1. more positive teaching patterns; 2. more negative attitudes toward their cooperating teachers; 3. more positive attitudes in the pupils in their classes. The results of this study are consistent with those of related studies conducted in other academic disciplines.

Nuthall, G.A. An experimental comparison of instruction strategies in the teaching of concepts. Doctoral dissertation, University of Illinois, 1966. (Dissertation Abstracts, 1967, 27 (12-A), 4137-4138.)

The purpose of this experiment was to determine the effects of certain variations in instructional strategies observed in the teaching of concepts in high school classes and, in so doing, to investigate the experimental utility of the analytic procedures developed by Smith, Meux, Coombs, and Nuthall (A Tentative Report on the Strategies of Teaching, University of Illinois, Bureau of Educational Research, 1964).

In the theoretical discussion it was determined that when students' knowledge of a concept is the objective of instruction, important variables include: instructional strategy, students' level of knowledge of related concepts, and the content of temporally continguous instruction.

For each of two different concepts, four alternative instructional strategies, which matched strategies observed in class discussions, were used in the design of four alternative programmed texts. In these texts the nature of the concept-relevant information was held constant while the kinds of strategic "moves" were systematically varied. Half of the students given each of the programmed texts were given prior instruction on conceptually related material, and the other half were given parallel instruction on unrelated material.

This established eight experimental conditions for each of the two concepts. Two comparison conditions in which the amount of concept-relevant information was varied were also established.

Students within each of sixteen tenth and eleventh grade classes in five different high schools were assigned at random to each of the experimental and comparison conditions for each of the two concepts. Students within each condition for each concept were subdivided, on the basis of a pre-test, into those with low, middle, and high levels of knowledge of related terms and concepts.

The criterion measures used consisted of scores on a retention test which included written responses as well as twenty multiple-choice type items. This test was administered four weeks after the time of instruction.

Three-way analysis of variance of the criterion scores for the experimental groups indicated that the students' level of knowledge of related concepts was the variable most closely related to retention. The effects of variations in instructional strategy were significant for both concepts, although apparently not so marked for one concept as for the other.

Multiple comparisons of mean scores indicated that, for both concepts, those instructional strategies which made use of comparisons with related concepts as a means of presenting information were least effective. Those instructional strategies which made use of instances were the most effective for one concept, but not for the other.

Variation in the relatedness of the content of prior instruction had no observable effects, and predicted interactions between some of the experimental variables were not confirmed.

The results suggested the conclusion that the effect of an instructional strategy and the effect of students' level of knowledge of related content are determined by the kinds of errors which students are likely to make in their selection and interpretation of the content presented by the strategy. Different instructional strategies may prevent or facilitate different kinds of errors. A teacher's selection of an appropriate strategy should depend on the kinds of errors he is most interested in avoiding.

Openshaw, M.K. Research in teaching. In E.B. Smith, & Others (Eds.), Partnership in teacher education. Washington, D.C.: The American Association of Colleges for Teacher Education and The Association for Student Teaching, 1968.

This overview of research positions and studies of teacher behavior dealt with: studies of integrative and dominative behavior; studies in democratic, authoritarian, and laissez-faire patterns; studies of emotional classroom climate; classroom interaction studies; studies for describing and defining good teaching; and studies of cognitive aspects of teaching-learning.

Piele, P. A social-psychological study of classroom verbal behavior. (AERA Paper Abstracts, 1969, p. 147)

The purpose of this study was to investigate the relationship of teacher open and closed mindedness to classroom verbal behavior.

Seventy teachers from elementary and junior high schools in eastern Oregon, eastern Washington, and Idaho were administered the Rokeach Dogmatism Scale (Form E). Seventeen high scorers and 17 low scorers were selected as subjects for this study. All 34 subjects were in the upper or lower quartiles of dogmatism scale scores. None of these subjects had any previous training in interaction analysis.

Each subject tape recorded six 20-minute segments of regular class lessons. Observers trained in the use of the Flanders' system of

interaction analysis listened to the tape recorded lessons and recorded the verbal behavior on tally sheets. A computer matrix plotting program was used to plot and compute the appropriate column and cell totals and percentages.

The significant findings of this study were that closed minded teachers appear to use a greater variety of verbal behaviors and to monopolize classroom talk more than do open minded teachers, and that students of open minded teachers appear to use more extended responsive talk and to verbally interact with each other more than do students of closed minded teachers.

It is suggested that, because closed minded teachers are more concerned about classroom control than open minded teachers, they tend to discourage student talk through the use of a wide variety of verbal behavior. It is further suggested that some of the verbal behavior used by closed minded teachers to control student talk are recorded as indirect influence by the Flanders system. An assumed generic link between Flanders' indirect-direct concept and Anderson's integrative-dominative, Lippitt's democratic-autocratic, and Cogan's inclusive-preclusive is questioned.

Politzer, R.L. & Weiss, L. Characteristics and behaviors of the successful foreign language teacher. Technical Report No. 5. Palo Alto, Calif.: Stanford Center for Research and Development in Teaching, 1969. (ERIC Abstract, ED 031 124)

An experiment with 17 teachers of first-year high school French recruited from the staffs of three large, diversified San Jose, California school districts was designed to (1) observe closely the classroom behaviors of the participating teachers, (2) identify those successful in terms of pupil achievement, and (3) compare the behaviors and characteristics of these teachers with those identified as less successful. The predominant feature of the research was the systematic observation and rating of the classroom behavior of the teachers by recording four 15-minute class segments over a period of five months. By means of specially constructed criterion tests, student and teacher questionnaires, the Modern Language Association Proficiency Tests for Teachers, and the observation of classroom procedures, data were gathered that yielded 40 variables. An analysis of the intercorrelation matrix of the 40 variables showed that a series of interrelated teacher behaviors and characteristics correlated significantly with student achievement. The two research hypotheses formulated focused on the linguistically definable and pedagogical aspects of the teachers' classroom behavior. The major recommendations emerging from the study concerned teacher training innovations and further research needs.

Powell, E.R.: Teacher behavior and pupil achievement. (AERA Paper Abstracts, 1968, p. 333-334)

The purpose of the study was to examine the effects of indirect or direct teacher influence on pupil achievement. It was hypothesized that, for pupils under the same teacher for their first through third grade school experience, indirect teacher influence would be positively

related to higher pupil achievement than would be direct teacher influence.

The teacher influence styles were determined through the use of a multivariate composite score derived from half-day observations using Flanders' Interaction Analysis. Teachers for the first three years, and for a subsequent fourth grade year, were dichotomized as indirect or direct, yielding four groups of pupils; Group I-D: three years of indirect teacher, one year of direct teacher, and Groups D-I, I-I, and D-D.

SRA Achievement tests were used to measure the dependent variable; Kuhlmann-Finch IQ tests served as a control variable. Groups were equalized at N=21 of each sex with a total pupil N=168. The achievement tests were administered after three years and again after a fourth year.

Using ANOV, groups were compared, with significant results yielding support for the supposition that three years of indirect influence under one primary teacher was associated with higher pupil achievement than three years of direct teaching. For the one subsequent year with a different teacher (in 4th grade), the results were mixed.

The conclusion reached was that while the long-term data lent support to the hypothesis in the direction of much other research, the fourth year (short-term) data were so mixed as to make any overall conclusion dubious.

Rogers, V.M., & Davis, O.L. Varying the cognitive level of classroom questions: an analysis of student teachers' questions and pupil achievement in elementary social studies. Lexington, Ky.: University of Kentucky, 1970. (AERA Paper Abstracts, 1970, p. 44)

This study sought to determine if student teachers' questioning strategy can be modified to increase the number of higher level cognitive questions, and, secondarily, to determine if pupils' achievement was higher in classes whose teacher asked more higher order questions.

Subjects were 20 student teachers. Ss in the experimental group (N=10) participated in seminars on purposes and uses of different cognitive levels of questions. All student teachers taught a four-day unit on the same substantive material. Each day, their questions were recorded by observors using a special observation schedule. Following the unit, pupil achievement was assessed by a specially prepared criterion test. Data were analyzed by ANOVA procedures.

Major results revealed the trained student teachers asked more higher level cognitive questions than did those not specially trained and that pupils' achievement in the two groups was not significantly different. Findings are related to research in teacher education and to classroom learning.

Rosenshine, B. Enthusiastic teaching: a research review. School Review, 1970, 78, 499-514.

A review of studies assessing the relationship between teacher enthusiasm and student achievement and discussion of the implications of these studies for teacher education programs and further research.

Two types of observation measures were used: 1) high-inference measures consisting of subjective scales which require considerable judgment by the observer to label the activity, and 2) low-inference measures consisting of objective categories which require little interpretation by the observer.

In the high-inference studies, the teacher behaviors which were most related to pupil achievement were "stimulating," "energetic," "mobile,""enthusiastic," and "animated." In the low-inference studies the teacher behaviors which showed most relation to pupil performance were movement, gesture, variation in voice, and eye contact.

The author suggests that animated behavior arouses the attending behavior of pupils without being distracting because it is content-free and may also be a secondary reinforcer for certain responses. Merely asking that a teacher increase his enthusiasm and animation, without changing content, resulted in superior student achievement.

Rosenshine, B., & Furst, N. Research on teacher performance criteria. In B.O. Smith (Ed.), Research on teacher education: a symposium. Englewood Cliffs, New Jersey: Prentic-Hall, 1971, 37-72. (Author Abstract)

In the first section of this paper we discuss the limitations of our knowledge about teaching, and acknowledge that sufficient information is not available on the relationship between a teacher's behavior and student learning in the classroom to design adequate programs in teacher education. In the second section we discuss the major results of one of the more promising areas of research on teaching-- those studies which attempted to relate observed teacher classroom behaviors to measures of student achievement. In the third section we discuss some of the issues and problems in research on teaching and offer suggestions for future research. We regard the third section as the most important one because a great deal of the research we propose can take place within the context of teacher education programs. In order for such research to be conducted, educational researchers will have to give of their time and skills. We hope that this chapter will persuade them to do so.

Solomon, D., & Others. Teaching styles and learning. Brookline, Mass: Center for the Study of Liberal Education for Adults, 1963. (ERIC Abstract, ED 026556)

Using 24 college and university teachers, this study investigated the effect of teaching styles on adult student learning and analyzed the results of a factor breakdown, interactions between teacher behavior and class and student characteristics, and profiles of teacher effectiveness. Gains in factual information were positively related to teacher clarity and expressiveness and to lecturing; gains on a comprehension test were associated with a moderate position on the permissiveness-control continuum and with energy, aggressiveness, and flamboyance. Students gave most favorable evaluations to teachers scoring high on warmth and clarity. Students with jobs did best with relatively aggressive teachers stressing factual participation; women did best under teachers scoring high on lecturing. Students below age 19 learned factual information best from teachers stressing student growth; those over 19, from teachers stressing factual participation. Students in large classes learned facts best from

from permissive, warm, flamboyant teachers stressing student growth; students in small classes did best with teachers who lectured, were relatively "dry," and emphasized factual learning participation. Implications and limitations of the study were also noted.

Tuckman, B.W. A study of the effectiveness of directive versus non-directive vocational teachers as a function of student characteristics and course format. Final report. New Brunswick, New Jersey: Rutgers State University, 1968. (ERIC Abstract, ED 028 990)

The hypothesis that, for vocational and nonvocational teachers, a directive teaching style would be more effective with concrete authoritarian students and a nondirective teaching style would be more effective with abstract, nonauthoritarian students was tested in a two-phase study. A behavior rating scale, Student Perception of Teacher Style (SPOTS), was developed and tested in phase 1, while 12 directive and 12 non-directive high school teachers (half vocational and half nonvocational), chosen on the basis of their SPOTS scores, served with their students as subjects in phase 2. Student satisfaction with the course, student relative preference for the teacher, and student achievement (grades) were analyzed separately for vocational and for nonvocational teachers by two factors: teacher directiveness or nondirectiveness and student personality orientation (as obtained from the Interpersonal Topical Inventory and the F-scale which were completed by the students). Findings showed that all students were more satisfied with, preferred, and earned high grades from non-directive teachers in both vocational and nonvocational subjects, and that abstract and nonauthoritarian students showed differentiation between directive and nondirective teachers while concrete and authoritarian students did not. (An 86-item reference list and an appendix containing the tests used are included.)

Turner,R.L. & David, D.A. Teacher characteristics, classroom behavior and growth in pupil creativity. (AERA Paper Abstracts, 1967, p. 182)

Concurrent relationships among three sets of variables were examined: Set I, Teacher Characteristic Scales: Stability, Organization, Resourcefulness, Viewpoint and Involvement; Set II, ten observed teacher classroom behaviors ordered to three groups: Climate, General Structuring, and Specific Structuring for Creativity; Set III, four Guilford Creativity Scales: Fluency, Sensitivity, Flexibility, and Redefinition.

Pupils in thirty sixth-grade classrooms took the Guilford scales in October and again in April. Their teachers were observed three times during February-March using the Denny-Rusch-Ives Classroom Observation Schedule. The teacher characteristic scales were mailed to teachers after the final testing of their pupils. Relationships between teacher characteristics, classroom behavior and adjusted creativity gain were determined by correlational analysis and ANOVA.

Teacher involvement and stability were predominantly unrelated to observed teacher behaviors and pupil gain. Organization was

positively related to climate ($p<.01$), and both were negatively related to fluency gain ($p<.05$). Viewpoint (permissive) was positively related to flexibility gain ($p<.01$) and to general structuring ($p<.05$), but the latter were unrelated to each other. Resourcefulness was positively related to redefinition gain ($p<.01$) and to specific structuring ($p<.05$), but the latter were unrelated to each other.

Teacher characteristics are reflected in observed teacher behavior and each, somewhat separately, in pupil gain.

Walberg, H.J., & Anderson, G. Classroom climate and individual learning. (ERIC Abstract, ED 015 153)

To investigate the relationship between individual satisfaction with classroom climate and learning, 2100 high school juniors and seniors were asked to evaluate the Harvard project physics, an experimental course which utilized new instructional methods and materials. A 50 percent random sample from each classroom was administered the physics achievement test. The science process inventory, the semantic differential for science students,and the pupil activity inventory (criterion measures) at the beginning and end of the year, while a random fourth of each class was given the classroom climate questionnaire at mid year. It was found that..(1) significant and complex relations existed between climate measures and learning criteria, i.e., stratification and friction climate variables predicted science understanding while others predicted physics achievement and attitudes towards laboratory work. (2) groups of climate variables predicted learning better than others, e.g., structural variables such as isomorphism(the tendency for class members to be treated equally) and organization were better predictors than coaction (compulsive restraint or coercion). Replications of the study (using a national random sample) are being carried out with revised instruments.

Weber, W.A. Relationships between teacher behavior and pupil creativity in the elementary school. (AERA Paper Abstracts, 1968, p. 137)

This study, based on the view that the fostering of the creative potential of pupils is a valued educational goal, investigated the relationships between specified patterns of teacher behavior and pupil creativity. A conceptual model-suggested by the theoretical speculation of Carl Rogers and the research of Ned Flanders-led to the testing of hypotheses relating the teacher behaviors which 180 elementary school pupils experienced during a four year period (identified as either indirect or direct through use of the Flanders System of Interaction Analysis) and the creativity of these pupils (as measured by the Torrance Tests of Creative Thinking).

Analyses of variance indicated that pupils who had experienced indirect teaching during their first three years of school achieved significantly higher scores on each of the three measures of verbal creativity-fluency,flexibility, and originality-than did pupils who had experienced direct teaching during their first three years of school ($p<.01$). In the main, however, the fourth year experience had little, if any, influence on the verbal creativity scores. Analysis of the data

from the four measures of figural creativity-fluency, flexibility, originality, and elaboration-yielded less clear-cut findings. Unlike the results involving the measures of verbal creativity, differences due to the type of teaching pupils experienced during their first three years of school were minimal (the highest F ratio being only 1.14). Findings with regard to the fourth year experience were inconsistent.

On the basis of these results, it was concluded that certain aspects of the creative potential of pupils-particularly verbal potentialities-are fostered more under the influence of indirect patterns of teaching behavior than they are under the influence of direct patterns of teaching behaviors. This study, therefore, lends additional support to the mounting evidence which has indicated the positive effect of indirect teacher behavior.

Wittrock, M.C. Set applied to student teaching. Journal of Educational Psychology, 1962, 53, 175-180. (Psychological Abstracts,1963,37, No.3809)

To determine if a set to teach for pupil gain influences learning, student teachers in the experimental group were told that their final course grades in educational psychology and in student teaching depended upon the amount of pupil gain. Difference between pretests and posttests for 787 secondary school students of English, American government and history, and social studies indicated that the experimental group of teachers produced more ($p < .001$,2-tailed) student gain than did a control group of student teachers. An analysis of covariance of the posttest scores adjusted for the pretest scores supported the above result ($p < .05$). It was concluded that the concept of set finds application in teaching.

Wright,C.J. Verbal teaching behaviors and their relationship to pupil achievement. (AERA Paper Abstracts, 1969, pp.77-78)

The purpose of the investigation was to determine which of certain selected teaching behaviors correlated significantly with a measure of pupil achievement. In addition, the study was designed (i) to provide a description of the teaching tactics of a group of New Zealand teachers, and (ii) to indicate differences among three selected groups of teachers.

The study involved 17 teachers of Grade 3 New Zealand children in 51 lessons on a nature science unit, the content of which was carefully controlled. Six of the teachers were experienced "superior" teachers and six were teachers' college students on their first teaching practice assignments. The third group were teachers' college students who had had a course in the analysis of teaching, followed by a micro-teaching course during one of their practice-teaching sections.

The lessons were tape-recorded and transcribed. The tape-scripts were analyzed to provide 61 variables of teacher behaviour. These were didactic in nature, falling for the most part into categories corresponding to three of the pedagogical moves identified by Bellack and Davitz (1963). Among the structuring moves identified were: pre-solicitation structuring; post-solicitation structuring; and summary statement closure. Solicitating moves included: single and multiple soliciting; open and closed soliciting; redirected soliciting; and six types of

reciprocated soliciting (seeking amplification, extension, clarification, justification, verification or repetiton of pupil response). Teacher reaction moves included: simple and complex comment; use of reward and praise; managerial and urging comment; the use of continuant soliciting; and a number of kinds of reflection or repetition of pupil response.

The criterion measures of pupil achievement were scores on an achievement test corrected for pupil intelligence and prior knowledge of nature science concepts.

Significant relationships between certain teaching behaviours and pupil intelligence, prior knowledge and achievement are reported.

Wright, C.J., and Nuthall,G. Relationships between teacher behaviors and pupil achievement in three experimental elementary science lessons. American Educational Research Journal, 1970, 7, 477-491. (Journal Abstract)

Tape-records were made of seventeen teachers teaching a prescribed three-lesson science topic to Standard Two (third grade) pupils. Teacher behavior variables were identified in the tape-records and correlated with achievement test scores which had been corrected for pupil intelligence and prior knowledge. Significant correlations were obtained between mean class achievement scores and six kinds of teacher behaviors: patterns and kinds of teacher questioning, teachers' reactions to pupil responses, teacher structuring, revision, and use of thanks and praise.